D 8523 A

### World News 200 Kabul salis for four-sided banks plan talks on um secord

Afghanistan has written to the United Nations proposing a meeting between the US, the Soviet Union, Pakistan and Afghanistan to discuss the Geneva accords on Afghan-istan, said Tass, the official

Soviet news agency.

Meanwhile, uncertainty
among Afghan guerrillas after the death of President Zia ul-Haq of Pakistar has provoked an all-out fight between resis-tance leaders over control of the city of Kandahar. Page 3

#### Airliners crash

At least 13 people were killed when a Delta Air Lines Boeing 727 with 104 passengers and crew on board crashed on take-off from Dallas-Fort Worth Airport, Texas. Air 6; Hong Kong crash, Page 16

Sugan siege deaths The UN World Food Programme said more than 100 people a day were dying of hunger in the town of rebel-be-sieged Sudanese town of Aweil. A Government spokesman said at least 4,000 had already died of starvation there. A relief train carrying food set out for Aweil on July 15 but is awaiting a military escort.

#### US ABM warning The US warned the Soviet Union that it would consider declaring a radar station in Siberia a "material breach" of the 1972 Anti-Ballistic Mis-

sile Treaty. Page 2

China accuses Vietnam China accused Vietnam of disguising tens of thousands of its troops in Kampuchea and sending large amounts of arms to prop up the government it supports in Phnom Penh.

Workers at a Budapest factory staged Hungary's third strike in a week when they stopped in protest at the sacking of

### their director. **Burmese** opposition groups

called for nationwide general strikes and demonstrations again today, to add to the pressure on the one-party government for a return to democracy. Page 3

Elexican party's setback Mexico's ruling Institutional Revolutionary Party (PRI) held a much reduced 20-vote majority when the 500-seat Congress was formed. Opposition deputies have vowed to try and overturn the July election of PRI candidate Carlos Salinas de Gortari.

Greek smog ban Greece banned half the taxis and privately owned cars from the Athens area to control a smog cloud that sent at least 75 people to hospital.

#### Kurds fiee

Eyewitnesses put the number of Iraqi Kurdish refugees crossing the border with Turkey to escape the Iraqi Army as high as 100,000. Page 2

### Chillo deaths

Three people were shot dead and more than 800 demonstrators arrested in protests against the military's choice of President Augusto Pinochet as sole candidate for a presi-dential plebiscite. Page 16

Ecuador economic plan Ecuador's new Government announced an emergency plan as the first stage towards putting the economy in order and reducing inflation from 60 to 30 per cent. Page 4

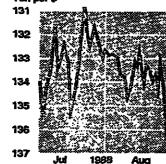
Hungary's iterd lottery Hungary has begun selling its citizens lottery tickets for schillings to help service the of nearly \$18bn. Page 2

### eBusiness Summably Six Japanese branches in Franklist

SIX MORE Japanese banks plan to set up investment banking subsidiaries in Frankfurt by early next year, undaunted by last October's stock market crash and the present torpor in the West German stock and bond markets. Page 16

WEAKER YEN added further discouragement to Tokyo equi-ties, pushing share prices down in thin volume. The Nikkei average, which had finished

## Yen per \$



higher on Tuesday, failed to retain its modest strength and closed 145.70 down at 27,365.95.

VOLKSWAGEN, West German car manufacturer, expects worldwide sales to reach record of nearly 2.9m vehicles this year after a 2 per cent rise to 1.48m in first six months. Page 17

NATIONAL Westminster Bank of UK is to raise £100m by seek-ing a listing for its shares on Tokyo Stock Exchange and making a public issue in the Japanese market. Page 17

BID battle for Peachey Property Corporation, the UK company which owns London's Carnaby Street, came to a swift conclusion after Wereldhave, the Dutch predator, raised its brokers, swept into the market for Peachey shares. Page 17

HACHETTE, leading French publisher, has agreed to buy Salvat, fifth largest publishing house in Spain, for around FFr350m (\$55.3m). Page 19

BANK OF NOVA SCOTIA, Canada's fourth-largest char-tered bank, reported earnings of C\$368m (US\$299m) or C\$2.02 a share for first nine months of fiscal 1988, up from C\$359.7m or C\$2.09 on an operating basis a year earlier. Page 18

SUN MICROSYSTEMS, the leading US computer workstation manufacturer, signed a long-term technology licensing and co-operative development pact with Texas Instruments. largest US semiconductor pro-

ducer. Page 18 CARNIVAL CRUISE Lines of Miami, world's third-biggest cruise company, looks likely to take over Royal Admiral Cruises, the second biggest.

ANTOFAGASTA HOLDINGS, listed in London though most of its assets are in Chile, has about \$100m of cash ready for acquisitions, according to

chairman Andronico Luksic. Page 18 HONEYWELL, the US electronic controls and defence equipment group, is putting up for sale four divisions of

its space and aviation systems husiness. Page 18 ALUSUISSE, the Swiss light metals and chemicals group, hopes to resume dividend pay-

year absence. Page 19 STEYR-Daimler-Puch AG, Austria's financially troubled machine and engineering group, has trimmed its loss for 1987 and aims to break even

by 1990. Page 19 JACKSONS, Australia's first

### UK faces demand for full statement on IRA deaths

By Michael Cassell in London and Our Belfast Correspondent

THE UK Government retary, faced calls to provide an early explanation of the incident and allay suspicions that the security forces were pursuing a shoot-to-kill policy following the recent increase of texturity forces.

by security forces.

Demands for an investigation into the deaths - near Omagh in an area close to the site where eight British soldiers were killed by an IRA bomb last month – came from Dublin, from nationalist politicians in the province and from Westminster.

In particular, Mr Tom King, Britain's Northern Ireland Sec-

terrorist violence. The killings are the latest in a period of renewed violence both within Ulster and on the UK mainland. The British Gov-ernment has come under increasing pressure to take tougher measures to deal with the situation, including the reintroduction of internment

without trial. The men were travelling along the Omagh to Carrick-more road where their hijacked car was ambushed. The vehicle was riddled with bullets and

the men died instantly.

It is being widely accepted that the latest undercover operation was co-ordinated by the SAS, Britain's undercover, consider operations force But special operations force. But given the sensitive nature of covert security operations in Ulster the British Government is not expected to accede to any demands for a disclosure of events surrounding the

As calls for a statement

grew, West German border guards yesterday made a potentially important break-through for the UK Government's counter-offensive with

ment's counter-offensive with the arrest of two heavily-armed men suspected of being IRA terrorists after they had entered the country by car from Holland through a remote border crossing near Aachen. The arrests followed recent moves by the IRA to step up its campaign against British mili-tary personnel in continental Europe. West German police Europe. West German police believe they may have pre-vented another attack on a

British base.
In a strongly worded statement, Mr Charles Haughey, Irish Prime Minister, and his Cabinet colleagues said "the frightening escalation in the level of violence undermines of the the very maintenance of the rule of law, and can only bring further divisions and tragedy for the people of the North."

Mr Haughey's request for a report on the deaths through the Anglo-Irish secretariat in Relfast was immediately attacked by predominally Protestant Unionist politicians in Ulster who welcomed the out-

come of the Omagh operation and accused him of interlering in British affairs.

The Rev William McCrea, Democratic Unionist MP for Mid- Ulster, said it was "sheer hyprocrisy" for Mr Haughey to denant a report from the Brit-ish Government. The Irish Prime Minister, he added, had not demanded a report on the recent murder of eight British soldiers.

In London, Mr Jim Marshall

an opposition Labour Party spokesman on Northern Ireland, wrote to Mr King ask-Continued on Page 16

EC VIDEO RECORDER

**IMPORTS** 

8 Korear 75 425 1,224 Japan 76 991 762

Thereas, Bender: Semeng, 10ries, Pund. Gold Agents only Surgices Commission targets of a growing number of BC anti-dumping actions over

the past year.
Mr Takao Negishi, Kanopean representative of the Japanese

Electroni s Industry Associa-tion, said: "We are very unhappy with such actions,

which are becoming almost

daily events as well as with the criteria which the Commission

criteria which the Commission is using to give almost automatic dumning margins."

The duties were triggered by allegations of unfair pricing made last year by the Milanbased European Association of Consumer Electronics Manu-

consumer alectronics manufacturers, a lobby grow com-putating the seven main Suro-pean VCR makers, including Philips of the Netherlands,

Grundig of West Germany, Thomson Grand Public of

in a statement yesterday, the

000s of units 1985 1986 1987

### Walesa urges strikers to end action after official talks

By Christopher Bobinski in Warsav

MR LECH WALESA, leader of Poland's banned Solidarity trade union, last night urged an end to the strikes at the Gdansk shipyard and else-where following a three-hour meeting with Gen Czeslaw Kiszczak, the country's Interior Minister.

Mr Walesa sent a telex mes-sage to strikers asking them to and their protest after return-ing from Warsaw to his home city of Gdansk. An aide said last night that Mr Walesa was conferring with strikers at the shipyard, and the strike there could end very soon. The Warsaw meeting, a pre-

cursor to wide-ranging talks on Polish labour unrest due to start when all the stoppages have ended, left Mr Walesa hopeful that he would be able to persuade the authorities to recognise his trade union. Bishop Jerzy Dabrowski, repre-senting the Catholic Church, also attended yesterday's talks. Prof Andrzej Stelmachowski, chairman of the Warsaw Cath-

olic Intelligentsia Club, who yed a key role in setting up the talks, said yesterday that the authorities had made clear there were to be no taboo subiects at the forthcoming meetings with the Interior At yesterday's talks, Mr Stel-machowski said the Solidarity

leader had put on the agenda

"the roads leading to the realis-ation of trade union pluralism

and Solidarity's role in the Re-legalisation of Solidarity
has been a prime demand of
workers who have been on strike this month at coal mines, ports, shipyards and a steel mill in the second wave of



pro-Solidarity strikes this year. Mr Walesa's meeting with Gen Kiszczak came eight years to the day after the aution des agreed in Gdansk to the setting up of Solidarity. The union was banned 16 months later when martial law was introduced Gen Kiszczak's brief appears to have been to calm the situa-

tion in the country, although without offering official recog-nition of Solidarity. Rather, officials continue to declare they are ready to make far-reaching concessions on the political front and hope to incorporate opposition leaders into official institutions. Mr Stelmachowski, however,

said that yesterday's meeting. which ended a seven-year

period during which the authorities had sought to destroy Mr Walesa's reputa-tion, was "the beginning of a process, the results of which were uncertain." Mr Władyslaw Baka, a polit-

buro member in charge of the economy yesterday reiterated that the authorities wanted to see only one trade union in each factory, a role now being performed by the official OPZZ

However, he admitted that the authorities needed popular support to continue reforms which would decentralise the Polish economy and to combat

Mr Walesa seems to have taken a moderate line at yesterday's meeting. This was echoed by Prof Stelmachowski, who said that the talks would have to take time as the authorities had to be reassured that the conflicts of 1981 would not recur if Solidarity were

He said that the return of the banned union would "involve its members in a common front" supporting official economic reform efforts against conservative regis-

Meanwhile Mr Zbigniew Messner, the Prime Minister, yesterday accepted personal blame for economic ills behind the latest strike wave, but said his government's economic policy was on the right track.

Mr Messner spoke at a meeting of a special parliamentary committee called to examine

the government's handling of crucial economic reforms in recent months after sharp criticism by leaders of the ruling Continued on Page 16

### Italy ends attempt to land waste in Britain

By John Wyles in Milan and Richard Donkin in

ITALIAN authorities appeared last night to have given up all hope of landing in Britain some 2,100 tons of waste transported from Nigeria on board the ship Karin B.

As the vessel began sailing eastwards along the English Channel, a spokesman for the Ministry of Civil Protection in Rome acknowledged that "there seems to be no chance of landing the cargo in

Meanwhile the UK Department of the Environment said it was satisfied that a repeat of the Karin B affair was unlikely because port authorities had been alerted to the need for full documentation about imported consignments. EC regulations on the cross-handless are reserved. border movement of toxic wastes were to come into force in the autumn.

The Department admitted that earlier implementation of the import regulations due to come into force on October 14 - and export regulations to be enforced a month later, on November 14 – would have prevented the ship setting out for Britain in the first place.

In future, the waste producer would have to give the

receiving waste disposal authority a month's notice of any shipment of toxic wastes. A spokesman for Department of the Environment denied that implementation of the that implementation of the regulations in the transfrontier shipment directive had been speeded up by the row over the Karin B.

Britain, he said, would be the third country to enforce the regulations, following Denmark and Holland. The only reason for a delay in enforce-

reason for a delay in enforce-

### **Brussels** imposes duties on video recorder imports

By William Dawkins in Brussels

THE European Commission yesterday imposed anti-dump-ing duties on imports of cheap video recorders from five companies in South Korea and Japan in a move expected to provoke immediate price rises throughout the \$2bn European Community market for VCHs, Imposition of the duties, of

up to 30 per cent and affecting 160 to 50 per cent and attecting \$600m worth of imports amu-ally, is the strongest sign yet of the Commission's wish to keep alive European production of VCRs and other consumer electronics.

The five Far Eastern companies involved were found by the Commission to have been selling VCRs in Europe at prices between 18 per cent and 29.2 per cent less than those they were charging in their home markets. This helped the companies to boost their com-bined EC market share from 8.6 per cent in 1985 to 30 per cent now, according to Com-mission estimates. Overall EC sales of VCRs climbed from 5.8m units in 1984 to 7m last year, the growth lagging well behind the boom in Far East-

The five companies include all of South Korea's main VCR producers - Daewoo, facing a duty of 29.2 per cent of its EC sales prices, Goldstar, being fined 28.4 per cent and Samsung 25.2 per cent. The other two companies concerned are Funai and Orion, both from Japan and facing duties of 18 per cent each. The five compa-nies were most active in the lower end of the market. The Commission action provoked immediate protest from Japan and add a further irritant to the EC's tense trade relations with South Korea.

Both countries have been the

Commission said it was in the Community's interest to impose provisional duties to get rid of the threat posed by the cheap imports from the Far-Eastern companies to the European VCR industry and to the thousands of employees linked to it. The Commission added:
The maintenance of produc-

Britain.

tion by the Community industry is essential so that it can develop by its own efforts new technologies for consumer goods of the future. US imposes dumping tax on That bearings, Page 16

### Union Texas loses appeal over taxing of dividends from UK

BRITAIN'S Inland Revenue won an important tax case in the High Court yesterday when Union Texas International lost its appeal against tax deductions from dividends paid to it by its UK subsidiary.

Union Texas won its argument however that the color-

ment, however, that the calculation of withholding tax was wrong and was awarded £1.3m. This has opened the door to similar claims totalling about £50m from US corporations in a similar position.

The US company's claim in respect of deductions made in the period 1981 to 1985 amounted to about £23m (\$39m). However, the potential threat to the Inland Revenue was much greater. A successful appeal by Union Texas would have been followed by similar claims by other US companies which according to companies, which, according to official estimates, could have easily surpassed film.
Inland Revenue officials seemed pleased with the decision. Clifford Chance, the Lon-don firm of solicitors acting for Union Texas, could not say whether there would be a fur-

ther appeal.
In addition to removing the threat faced by the Inland Revenue in this case, the purpose-ful method of interpretation - trying to follow Parliament's intention rather than the draftsman's text
- adopted by the judge creates
an interesting precedent for

an interesting precedent for future cases involving double tax agreements.

While Union Texas lost on the main point, its appeal was allowed on a second minor claim concerning the calcula-tion of the 5 per cent deduction from the sum of dividend and from the sum of dividend and it was found that the Inland
Revenue had deducted about
0.2 per cent more from dividends paid to the US than was

provided for in legislation – to-talling £1.3m in Union Texas's

case. This means that the Rev-

pean range; "

enue could be forced to repay 0.2 per cent of all dividends which have been paid by UK subsidiaries to their US parents since 1982, amounting to an estimated £50m.

Tax advisers said that US chents which have received substantial dividends from the UK have been waiting anxiously for the decision. Several are said to have begun legal pro-ceedings against the board of the Inland Revenue for misinterpreting tax law in the hope that this would protect their position if the case went against them.

The decision, which turned on the interpretation of the

UK-US double tax agreement, took Mr Justice Harmond two years to reach. He said he years to reach. He said he changed his mind several times during the hearings in July 1986 and the two years he considered the judgment.

The difficulty of the case appears to have been purely of Continued on Page 18

needs How Tonks toys with its Euro

Australia: Asian immigration issue divides

Editorial comment: Pinochet stakes Chile's

Ecosomic viewpoint: Unemployment is still today's problem: \_\_\_\_\_\_15

Kuwait and SP: Britain's free market credibil-

纵使用千种、万种语言来表达, "澳新银行"的意思总是一样: 澳大利西亚的领导国际银行

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#### listed stockbroker, slipped into red for year to June. Page 20 MARKETS STERLING STOCK INDICES Zine Cash matai (2 per tonne) New York close \$1.6845 (1.688) New York close Dow Jones Ind. Av. London; \$1.6840 (1.6905) 2.031.65 (-6.58)

200 600 DM3.1625 (3.155) FFr10.74 (10.69) SFr2.67 (2.665) Y229.75 (227.25) 400 DOLLAR 1988 INTEREST RATES

t cadon

New York ele DM1.8775 (1.86675) FFr6.374 (6.3365) SFr1.585 (1.5775) Y136.5 (134.85) (8) 3-gith Treasury Bills: DM1.8775 (1.8685) FFr6.3775 (8.325) Ching Bond: 98 1 SFr1.5850 (1.576) Y136.5 (134.4) Y16.6: 9.31% (9.32) GOLD New York ciçae

261.53 (-0.97) 1.753.6 (-1.2) World: 122.96 (Tues) Nikkel Ave 27,365.95 (-145.70) Frankfurt

1,473.3 (+7.5)

\$14.525 (-0.02)

West Tex Crude \$15.325 (+0.05)

Brent 15-day (Argus)

Romania's old and diverse cultures face annihilation

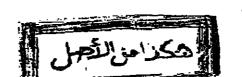


CONTENTS

Nicolae Ceausescu, the Romanian leader, has adopted a policy of forceable assimilation of minorities. These ethnic groups may not survive the threatened buildozing of villages to make way for giant agro-in-dustrial plants

Vity-Reviews World Guide

Lex: Maxwell; Peachey; Paarl; BSR; Aerospace surveys ... Financial Futures \_\_\_\_\_ 23 Raw Materials Gold \_\_\_\_\_\_ 32 Stock Markets Stock Marses -Wall Street -London ---Technology --Intl. Capital Markets \_\_\_\_ 20 Letters \_\_\_\_\_ 15 13-35 27-81 Menagement ..... Money Markets . Unit Trusts



### Higher economic growth forecast in France

THE PICK-UP in the French economy is showing much more staying power than expected, to the point where the Government is now counting on an overall growth rate for 1988 of nearly 3% per cent. This is faster than forecast either by the Government or the Organisation for Economic Co-operation and Development.
In June the latter projected 2
per cent growth this year, by
the beginning of July the French national statistical office was taking a more opti-mistic view, but its forecast for 1988 was still only 2.8 per cent. A new, higher forecast will not be published until the mid-dle of this month. But Le Monde has reported that the

WEST GERMANY's opposition

Social Democratic Party yester-

day attempted to re-establish its lost credibility in economic

management by supporting a

new package of policies designed to challenge its anti-

business image.
Mr Oskar La Fontaine, SPD

deputy chairman, spelt out the plans of the party's economic committee for lower taxes on

reinvested profits and environ-

mentally friendly companies, and more flexible working time

and pay freezes for better paid

likely to be candidate for Chan-

cellor in 1990 or 1994, went fur-

ther than the committee pro-

**US** presses

Moscow on

ABM treaty

THE US yesterday sought to

step up pressure on the Soviet

Union over the 1972 Anti-Bal-

listic Missile Treaty by warning that it will consider declar-

ing the Krasnoyarsk radar

station in Siberia a "material breach" of the accord.

At the end of a five-yearly review of the ABM Treaty, the US delegation said it was still

not satisfied with the Soviet

position on the so-called phased-array radar installa-

administration reserved its

rights to take "appropriate and

proportionate responses" in

future. Washington has already declared the radar a

serious violation of the treaty

on the grounds that it could

provide the key to a nation-

wide ballistic missile defence.

long-standing American posi-

tion that unless the radar is

verifiably dismantled, the US

will be unable to conclude any

future agreements with

Moscow on strategic nuclear

arms or space defence systems.

acknowledging that Soviet con-

struction efforts at the radar site have slowed down, raised

the stakes in Washington's

campaign against alleged

Soviet violations of the treaty.

Independent experts said that although it did not directly

threaten abrogation of the treaty, it implied that the US may not feel bound indefinitely

The issue is important because of the controversy

Initiative, or Star Wars programme, part of which Moscow

of the treaty. By repeatedly

raising the Krasnoyarsk prob-

lem, Washington is aiming to

deflect criticism, put the onus

violations and retain a free

"The Americans want to keep the ABM Treaty going so

long as it does not affect their SDI research," said a London

arms control expert. "They

to be abrogating the treaty.

hand in SDI research.

ver the US Strategic Defence

turn contends is a violation

by its provisions.

The US statement, while

The statement reiterated the

By Andrew Gowers

in Geneva

But Mr La Fontaine, who is

workers to help create jobs.

on 3.4 per cent this year, and Mr Pierre Beregovoy, the Finance Minister, yesterday obliquely conceded in an interview that the figure would probably be of this order.

At this rate, the economy would be growing faster than in any year since 1979; since the low point of near-stagnation in 1983, the pace has quickened each year, but last year's growth rate was only 2.2

The slow-down previously expected for the second half of this year is now being forecast for next year. Even so, Mr Beregovoy yesterday said he would be counting on a growth rate of 2.5 per cent in 1989. An important factor in this year's rate is the vigour of

posals and drew the anger of union leaders by proposing weekend working and worker share ownership. He also rec-

ommended looking at propos-

als to subsidise companies to

the moderate IG Chemie chemical workers union accused

him of "trying to create a higher profile for yourself on our backs." And Mr Franz

Steinkuhler, head of IG Metall,

said that weekend working

would increase production

without an increase in demand

mittee's proposals are a com-promise between Mr La Fon-

WEST German insurance magnate Mr Hans Gerling, 73,

against whom an arrest war-

rant was issued earlier this

week by a Cologne Court in a

complicated case involving tax

evasion charges for political contributions, is no stranger to

The multi-millionaire busi-

nessman, who owns the Geri-

ing group, one of Germany's

largest insurers specialising in

insuring the country's blue

chip companies, shot to public prominence in the 1970s follow-

ing the spectacular collapse in

1974 of Bankhaus Herstatt, the

The subsequent debt settle-ment involved Mr Gerling sell-

ing 51 per cent of his insurance

empire, which he dramatically

Mr Gerling was never charged in the Herstatt case,

which closed in 1983. However,

he left Germany just before the

court planned to summon him

to testify, resurfacing later in

This week, Mr Gerling was

again in Switzerland, where he

is undergoing medical treat-

ment, according to his lawyers.

This led Judge Albrecht

Osswald to issue the arrest

warrant for Gerling's return to

Judge Osswald justified his decision on the grounds that

Mr Gerling's departure to Swit-

bought back 10 years later.

by his company.

Although the economic com-

and lead to plant closures.

Mr Hermann Rappe, head of

hire more workers.

SPD bid to alter its anti-business image

industrial investment, which in the spring was forecast to grow by 6 per cent this year, but which is now projected at around 9 per cent. This is an important contributory factor in the continuing foreign trade deficits in industrial goods. The prospect of continuing expansion in the economy will obviously be an important plus for the new Socialist Govern-ment of Mr Michel Rocard, which has yet to show how if

National Assembly.
In particular, the economy's vigour is already smoothing the Government's path in the lead up to its first major parliamentary test during the com-ing autumn session - the bud-

taine and the party's union wing they still represent a marked shift in perspective and a clear admission that

Keynsian demand management

The SPD has long accepted the principles of the social

market economy and for a time under Chancellor Helmut

Schmidt was regarded as the party of big capital as well as big labour, with the Christian

Democrats representing small and middle size business.

But since losing power in 1982 and flirting with the idea of alliance with the radical

environmentalist Green party, the SPD has lacked credibility in economic policy and been

West Germany's tax scandal

entangles insurance magnate

Haig Simonian reports

on Hans Gerling, who

has been ordered by a

court to return from

Switzerland to face

tax evasion charges

zerland provoked suspicion

that he might attempt to avoid justice. "It is known in legal

circles that Mr Gerling does

not like to appear before the

Switzerland does not extra-

dite people to Germany in tax.

cases. However the judge

suspended the arrest warrant

for four weeks to allow Mr

Gerling to undergo medical

The latest case is one of several against leading German businessmen alleging tax eva-

Among those involved so far

have been famous names like Mr Konrad Henkel, scion of the

eponymous chemicals group,

and Mr Hans Merkle, the

supervisory board chairman of Robert Bosch.

The underlying issues are complicated. In Germany, char-

itable contributions can be

written off against tax - even if they go to the charitable

foundations of political parties.

is not enough.

will govern in the absence of a dependable majority in the

get for 1989. The buoyancy of tax revenues is such that the Finance Ministry is already predicting that this year's budget deficit, originally expected to be FFr115bn (£10.7bn), will turn out to be no more than

As a result, in yesterday's interview Mr Beregovoy was able to hold out the possibility of tax reductions, while at the same time increasing the level of government spending next year by 4.5 per cent. The main increases will be in education (up 5.6 per cent, with 12,000 new jobs planned), in research (up 6 per cent), and in employment measures (up 12.3 per

The minister reiterated that

associated primarily with dis-armament and social justice.

Despite the SPD's recent rise in the polls voters still had a low

The new thinking is meant to combine economic compe-

tence and ecological conscience and should be attractive to both Green and liberal voters.

Mr La Fontaine complained

that while company profits were back to 1960s levels,

investment was too low, and he accepted parts of the indus-

trialists' arguments that this is

because of excessive company

tax. However, the SPD pro

poses to increase energy tariffs and tax production which dam-

While some of those involved have settled out of court, Mr Gerling and others like him

have argued they are innocent

on the grounds that the subse

quent treatment of their contri-

butions was outside their con-

trol. Thus they have claimed

that they were unaware of

later diversion to party coffers.

Moreover, they say their activi-ties were common practice at

In January, Mr Gerling was fined more than DM1.8m -

one of the highest fines

Germany. However, he chose

to fight the action rather than

pay up and get a criminal record, leading to the present

There are grounds to suggest Mr Gerling was indeed unaware of what happened to

his contributions to an associa

tion linked to Germany's Christian Socialist Union – a

conservative political party. However, Mr Gerling may find his image harmed. During the

Herstatt case, the unbending insurer - who has since devel-

oped a strong distaste for unsa-

youry questions in general and the press in particular – sent his butler to court instead. The

loyal servant chose not to

reveal his employer's where-abouts - and landed up in jail

pens to the funds.

opinion of its economics.

policy would be based on three principles: control of inflation, lower interest rates, and a restoration of the balance of payments. He would be pressing the West Germans for more co-operation in stabilising the foreign exchange markets and

reducing interest rates.

He envisaged tax cuts total-ling FFr10bn-FFr12bn, shared equally between the corporate and household sectors; no deci-sions had yet been taken, he said, but implied that the changes would include reduc-tions in VAT rates and fiscal incentives for company invest ment. According to one report, the government is considering cutting the corporate tax rate from 42 to 37 per cent on rein-

### **Netherlands** plans big tax cuts

By Laura Raun in

THE DUTCH cabinet has agreed to cut steep taxes for both business and individuals as part of the 1989 government budget in an effort to offset rising inflation and a scrapped investment subsidy.

Corporate income tax will be trimmed to 35 per cent from 42 per cent from October 1 and value added tax to 18.5 per cent from 20 per cent in January. Child benefits are expected to rise by 4 per cent next year.

Mr Ruud Lubbers' adminis tration will unvell the budget officially when Parliament reopens on September 20. How-ever, details leaked out after the cabinet ended talks late yesterday, having earlier agreed on modest spending curbs of around Fl 1.5bn

curbs of around Fl 1.5bm (£429m) next year.
One economist yesterday criticised the fiscal blueprint for failing to pare sufficiently the Government's gaping budget deficit, and for assuming faster economic growth than was likely. "The deficit is still too high, the targets are too low and government debt is rising too steeply," he warned. A lower value added tax and more generous child benefits are aimed at maintaining consumers' purchasing power in

sumers' purchasing power in the face of higher than expected inflation – now forecast at about 2 per cent next year instead of 1 per cent. tax is intended to compensate

industry for the abrupt aboli-tion of an investment-subsidy scheme earlier this year. Indus try has insisted that the cut go ahead on October 1 instead of. being delayed in order to help offset cost overruns in the abolished scheme.

Besides stimulating the slug-

gish economy, the tax cuts are designed to bring the Netherlands closer into step with the rest of the EC in preparation for the single market in 1992. Windfall tax revenues will finance the tax cuts and still allow the Christian Democrat-Liberal Government to shrink the budget deficit in line with its goals. The deficit is forecast to narrow to about 6 per cent of national income in 1989 from 6.7 per cent this year.

### **Up to 100,000 Iraqi** Kurds flee from fighting into Turkey

EYEWITNESSES yesterday put the number of Iraqi Kurdish the number of iraqi kurdish refugees streaming across the border with Turkey to escape the blitzkrieg of the Iraqi Fifth Army in northern Iraq as high as 100,000. Officials in the region privately admitted that about 50,000 were camped near the town of Cukurca, some 10 miles from the border. miles from the border. Reports from the eyewitnesses say the tide of refugees swelled particularly after the Iraqis launched an all-out cam-paign on August 26 against remaining dissident Kurdish villages and guerrilla bases, the latter mainly of the Kurd-ish Democratic Party led by Mr

Mesod Barzani The flood across the ill-defined border appeared to take the Turkish authorities by surprise - until yesterday, offi-cials in Ankara were only talking about 6,000-8,000 refu-gees. Yesterday, the National Security Board chaired by President Kenan Evren met to consider the situation.

At first, the Turkish security forces attempted to stem the tide, but on Monday night, the Government ordered the border to be opened to the refu-gees. However, even on Tues-day, Turkish Foreign Ministry statements still stressed that Turkey was under no legal obligation to take in the refugees, and would do so only on humanitarian grounds.

The refugees have been cared for, and their wounded some allegedly burned by

chemical weapons - have been tended by units of the Hakkari provincial govern-ment But so far no civilian aid or relief organisation has been allowed access to them.

The Government's tardiness in admitting the scale of the problem (it still has not released any estimates of refugee numbers) was blamed by diplomats in Ankara on the fact that it was caught off balance, and on diplomatic sensi-tivities in the region. Throughout the Gulf war between Iran and Iraq, officials in Ankara have remained steadfastly neutral, although economically supportive without supplying

eaponry. Andrew Gowers adds from ing concern over the human rights situation in Iraq and over Baghdad's use of chemical weapons was put to a UN human rights sub-commission in Geneva today, but was expected to be deleated by a coalition of Communist and

Arab states. The resolution, proposed by a group of independent experts including Mrs Claire Palley, principal of St Anne's College, Oxford, urged Iraq to ensure full respect for human rights and fundamental freedoms" and halt immediately the use of chemical weapons. It did not mention the Kurds by name, but was clearly prompted by reports of Baghdad's recent campaign against its Kurdish minority.

### **Hungary launches lottery** to tap hard currency

By Leslie Collt in Berlin

HUNGARY HAS begun selling its citizens lottery tickets for D-Marks, dollars and Austrian schillings in an attempt to help service the nation's gross hard currency debt of nearly \$18bn, the highest per capita in Eastern Europe. The hard currency lottery is

the latest device introduced by financially hard-pressed East European governments to tap growing convertible currency holdings by the population.
A ticket costs DM10 or the equivalent in other Western currencies, with the proceeds coffers. The first draw will be held on October 2 when top prizes will include two BMWs, wo Citroens and VWs, colour television sets, videos and hi-fi systems. Ticket sales are reported brisk as the waiting

time for a Soviet-made Lada car in Hungary is six years. Hungarians along with Poles are able to travel to the West where many of them work. They frequently use the money to buy Western products in hard currency shops at home or save it for foreign travel. Thus both Hungary and Poland offer their citizens high interest rates for depositing hard currency in special accounts. Poland introduced the "N" account in 1985 which

currency without having to

present proof of its origin. Frequently the money came from the black market exchange of zlotys into dollars. The "N" accounts were in effect a laundering device and money in them did not earn interest for the first 12 months. Afterwards the funds could be transferred to an interest-bearing "A" account.
The authorities discontinued

the "N" accounts last July and allowed people to transfer as much hard currency as they Another device being used to an off bard curren the population is to sell them package tours to the West. The Polish travel bureau Orbis is offering Poles three-day trips by air from Warsaw to West Berlin for \$162 plus ZI 21,700. Czechoslovakia has also begun encouraging its citizens to open hard currency accounts for travel to the West and has introduced a scheme under which the Western relatives or friends of Czechoslovaks pay for documents they need to travel to the West in

hard currency. Only last month East Germany began to permit transfers of D-Marks from West Germany to East German nationals who, however, receive the proceeds in hard currency coupons for use in special shops

### Denmark aims to hold down spending

Afghan

Copenhagen
CUTS IN a variety of weifare payments, higher charges for medicine, user charges for records and tapes from public libraries, and labour-saving productivity increases in the public sector bureaucracy are called for by the Danish Government in the draft budget for 1983 presented vesterday. 1963 presented yesterday. The three-party non-Socialist minority coalition's intention is to maintain budget expendi-ture at an unchanged level in real terms next year and to cut it by about I per cent in 1990. But in order to achieve next

year's objective some DKrllbn (£916m) must be trimmed from expenditure before the Finance Bill is passed in December. Mr. Palle Simonsen, the Finance Minister, said that the "tight budget" and the lid on spending was an essential part of the Government's strategy for eliminating the external current account deficit, which is now in its 25th successive "We attach colossal priority

to achieving balance of pay-ments equilibrium," he said. The current account deficit is expected to rise from about DKr8hn in the current year to DKr14bn next year, according to the budget statement.

The draft budget shows a surplus for 1989 of DKr7.8bn compared with a deficit of DKr3.5bn in the current year. Expenditure, excluding interest on the national debt, is set to increase by 5.3 per cent from DKr208.6bn to DKr219.6bn, while revenue will increase by is expected to rise from about while revenue will increase by 7.6 per cent from DKr258bn to DKr278bn, reflecting a moder-ate recovery in domestic demand rather than increased

rates of taxation. Interest on the national debt, which will fall from DKr418bn to DKr411bn, or from 57 to 54 per cent of gross domestic product, will decline from DKr53.3bn this year to

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DKr50.6bn.
The abolition of the subsidy on penicillin and reduced subsidies on other prescription medicines are among the Gov-ernment's most controversial proposals. In an attempt to limit unemployment benefit payments, employers will be called on to finance the first day of unemployment and the employee to linance the second day's benefit.

The Government faces a difficult task navigating the budget through Parliament. The main opposition party, the Social Democrats, yesterday lambasted the Government for attacking welfare expenditure, but the party has already said that in order to avoid a political crisis this winter it will not vote against the Finance Bill.

#### BBC attempts to push open the Soviet door

**By Raymond Snoddy** 

MR JOHN TUSA, managing director of the BBC World Service, has appealed to the Soviet Union to take glasnost a stage further by increasing journalis-tic access to the country.

He has written to Mr Ivars Kezbers, director, of Radio. Moscow, the Soviet Union's external broadcasting service which transmits programmes in 34 languages, appealing for the removal of barriers facing foreign journalists in the Soviet Union. He wants greater freedom for journalists to travel without the cost of hav-ing to pay for "minders." Mr Tusa was responding to requests from Radio Moscow for an exchange of programmes, a request which he rejected. "International relationships of that institutional kind have a rather poor record," he said, while amountered that the said of the said cing yesterday that all the external services of the BBC would be known as the BBC World Service.

"What we want is greater journalistic access," said Mr Tusa who earlier this year shared a platform with Mr Kezbers and Mr Dick Carlson, director of the Voice of America. carector of the voice of America, at a conference in the US.

There had already been a dramatic change in attitude in the Soviet Union, he said. Writers and intellectuals were more ready to speak openly to the RBC Russian service.

## Ceausescu's bulldozers ready to bury rich heritage

The old and diverse cultures of Romania's minorities are facing annihilation, writes Judy Dempsey destruction of a way of life and cul-

GNES K. left Transylvania in A Romania four months ago with her two small children to settle in neighbouring Hungary. She left behind all her friends and most of her belongings. Starting a new life in Hungary, she

admitted, would not be easy. But it was her choice. "I want my children to speak Hungarian in the schools and in the street. At home, in our small town in Transylvania, we were discouraged from speaking Hungar-The 1.7m ethnic Hungarians, Europe's largest minority, are just one of several minorities who live in

don't want to be the ones seen Transylvania. But over the past 20 President Reagan has directed the Pentagon and years, these minorities, whose centu-ries-old traditions make up part of Romania's rich culture, have either other government departments to consult with Congress in emigrated or become gradually, but forcibly, assimilated into the Roma-nian way of life. developing a response to the alleged Krasnoyarsk violation. The Soviet Union maintains Apart from the Hungarians, which include the 600,000 Szeklers and that construction work on the radar has been frozen, and that the Krasnoyarsk installation 100,000 Csango Hungarians, one of the oldest minorities in Romania is the German community. Known as the

Saxons, they were invited to Transylvania in the 12th century by the Hungarian king, Geza 11 (1141-1162). Their main task was to guard the southeastern frontier of Transylvania.

Over the centuries, the towns of Sibui and Brasov, whose architecture still reveals a distinct Habsburg influence, became centres of a thriving

Later, in the 18th century, the Saxons were joined by the Swabians, who had originally come from the regions along the Rhine. They had been invited by the Habsburgs to settle in the Banat, a region in western Transversion. The Swablans were distinct from

the Saxons, not only through their religion (they were largely Catholic while the Saxons were Protestant or Evangelical), but they were renowned for turning the swampy, infertile Banat into a rich agricultural region.
Over the centuries, several other
minorities settled in Transylvania.
These included the 170,000-strong Jewish community which came originally from Eastern Europe. Because of the Holocaust and emigration to Israel, the population has dwindled to fewer than 10,000.
The 12,000 Armenians, noted for

their sound commercial sense, arrived in the region as early as the Middle
Ages. But they are fast becoming an
historical curiosity. Over the years,
they were assimilated by the Hungarians. And the Orthodox South Slavs, who settled in Transylvania during the 19th century and who first adopted the Hungarian language, were later assimilated by the Romanians.

Smaller minorities still live in Transylvania. These include the Czechs, the 50,000 Serbs, the Croats, Slovaks, Bulgarians, and the largely forgotten But the ethnic minorities are losing

their culture, language and identity due to the policy of Romania's Presi-dent, Mr Nicolae Ceausescu, of "Romanianising" these communities.

Over the years, the availability of schools, books and newspapers in the mother tongues of the minorities have been radically cut back. A combination of rapid industrialisation and migration of large numbers of Romanians into the Hungarian, German orother ethnic minority regions, has also diluted the sense of identity and

ndeed, the erosion of these cultures and the apparent inability of the ethnic minorities to resist the assimilation process, eventually forced the cream of the German intelligentsia to emigrate in the early 1980s to West Germany.
"When the intellectuals leave, there

is little hope for the continuation of the culture," said an ethnic German intellectual who has himself applied to leave. Such emigration has reduced the once thriving 700,000 German community to 220,000.

It is now widely believed that the future of the ethnic minorities will hardly survive Mr Ceausescu's policy of razing villages to create giant agro-industrial complexes. Many Hungar-ian officials in Budapest and West German diplomats believe that this German diplomats believe that this policy will lead to the physical

Under such circumstances, the Bonn Government has decided to continue to "buy out" the ethnic Germans, even though many officials hold the view that the Hetmat or homeland of the ethnic Germans is Romania. But, they add, what is a homeland without freedom to express identification.

one's identity.

The Budapest Government, for its part, is bombarded with applications from ethnic Hungarians to settle in Hungary. The Slovak authorities have criticised the Romanian plan on the grounds that, besides the threat to the

minorities, such modernisation poli-cies failed in the past.

This "systemisation" policy was raised in talks last Sunday between Mr Karoly Grosz, the Hungarian party leader, and Mr Ceausescu. Regardless of the talks, the programme looks set to continue. Whatever the merits of this grand agricultural scheme, offi-cials from both East and West believe Romania's once rich heterogeneous culture will be finally destroyed.

### Volgograd tractors bogged down by old technology and poor quality

cannot be a violation of the treaty if it is not operational.

THE Soviet Union's biggest, oldest and most honoured trac-tor plant is in a bad way. The Volgograd factory, whose tractors kept Soviet

agriculture going through the war and which broke the soil on the virgin lands, now needs re-equipping throughout, cannot bring out new models, has to hire ex-convicts because it is unable to attract the young, and has terrible industrial rela-

At the last meeting at which the general manager addressed his workers, he spoke for an bour and a half and told them

they should not criticise him. Soviet tractor building has been the subject of some comment - largely because its products are said to be of low quality. Estimates, including Soviet ones, point to as much as a third of the stock being broken down or under repair at

any given time. The picture in Volgograd emerges from a round table discussion, printed yesterday in Sovietskaya Rossiya – and was perhaps a little less frank than it might have been because the wordy manager. Mr M.M. Budko, was sitting at the round table himself.
Still, what emerged was a catalogue of horrors which, though described as worse than at other similar plants, still speaks volumes about the problems of Soviet industry.

These problems include:

Outdated equipment. In the pressroom, 90 per cent of the presses which were installed in the thirties, soon after the plant was first built, are still Bad organisation. Three

new models - the Voigar, the

VT100 and the VT200 - have

been taken to prototype stage

but languish there. The Volgar has been at that stage for 10 years.

• Lack of funds. The Agricultural Machine-Building Ministry has promised reconstruction, but never delivered it. Mr A.V. Posanov, a worker in the plant who was also a delegate to the 19th party conference earlier this year and who emerges as something of an opponent of Mr Budko, says he asked to see the minister while at the conference but did not get a hearing.

• Inability to attract young, trained labour. Mr Budko com-

plained that the vast plant was usually 4,000 workers short, forcing him to employ unskilled ex-convicts. Specialists were shunted about the plant to fill gaps in the lines, and most months saw overtime worked every Saturday, and sometimes Sundays, too.

• Wage rates are uncompetitive with the co-opera-tives - an early sign that this much-boosted but still small sector is causing problems for the state enterprises. Bonuses

for overfulfilling norms are

tiny - a brigade which does

.120 per cent of the norm gets

only five or six roubles a administration - as workers month more per worker than the brigade which does only 90 The Sovietskaya Rossiya cor-

respondent chairing the round table comments in an after-word that the management is not doing the lob

not doing its job.

A gathering of the workers to discuss the half yearly progress some weeks ago lasted three hours, half of which was taken up by Mr Budko's speech. It was, on his account,

generally have been told to do by the national leadership. However, his solution (and that voiced by many of the par-ticipants at the discussion) is not, it seems, to encourage more self-management, as is the present trend encouraged by politicians and the media Instead, he says, the ministries and the local party and soviets must take the matter in hand '- a reliance on the old command mechanisms which have highly defensive, dealt with no allowed the flower of Soviet substantive issues and told the workers not to criticise the state in the first place. EINANCIAL TIMES

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### Afghan guerrillas quarrel over fate of besieged city

UNCERTAINTIES among almost total influence, to move Afghan guerrillas after the death of President Zia ul-Haq of Pakistan, their staunchest ally, has provoked an all-out fight between resistance lead-ers over control of the southern city of Kandahar. Mr Gulbuddin Hekmatyar, the fundamentalist leader has

the fundamentalist leader, has gone there personally in an apparent attempt to sabotage negotiations between moderate resistance commanders and the Kabul regime aimed at ending the fighting.

Four posts around the city have recently fallen. Now only the airport and military posts in the town centre remainunder regime control and the city which is under siege seems on the verge of falling. Any military attack would result in widespread casualties, civilians having refused to leave the town. Most muja-hadin would prefer to win the city through political not mili-

Kandahar is traditionally a royalist stronghold. Fundamentalists fear that if the moderates gained control they may set up their own government and bring back the former King Zahir Shah. Moderate leaders claim that Mr Hekmatyar hopes to take the town, enabling the unpopular interim

Mr Hekmatyar is unlikely to be able to secure a military victory in Kandahar. He has few men in south west Afghanistan and with Gen Zia's death has lost his most powerful backer. Mr Asim Nasser Zia of the moderate party NIFA described Mr Hekmatyar's move as a "suicide mission," while Mr Hamid Karzay of ANLS, another moderate party says "with Zia's death Hekmatyar has become an orphan. He is a

desperate man."
The Pakistan intelligence agency, ISI, which oversees arms distribution to the resistance, is believed to be backing Mr Hekmatyar in his attempts.
ISI is already being blamed for "allowing foreign hands to penetrate Pakistan's inner-most security defences". An ISI offi-cial said: "We are as much in need of a victory in Kandahar as Zia was, and Hekmatyar is our man."

● A Soviet spokesman yester-day acknowledged Moscow had sent military aircraft from Soviet territory to defend the Aighan town of Kunduz, Rester writes from Moscow. Mr Gennady Gerasimov said rebel forces had destroyed much of Kunduz and taken 200 women from the city before it was recaptured by Afghan troops.

### Chinese get senior Hong Kong jobs

By John Elliott in Hong Kong

A NEW generation of high flying Chinese civil servants in their 40s has strengthened its hold on top jobs in Hong Kong's Government following a reshuttle of posts announced this week for implementation during the next few months.

Mr John Chan Cho-chak, 45, deputy chief secretary, who is a front runner to be the territory's first local financial sec-retary and chief secretary in a

retury and chief secretary in a few years' time, has been announced as secretary for trade and industry. He succeeds Mr Hamish Macleod, 48, who becomes deputy financial secretary and is seen as a candidate, to succeed Mr Piers Jacob when he retires as financial secretary next year.

Mr Chan's job, which involves handling Hong Kong's planned political reforms, is being taken over by Mr Michael Suen Mingyeung, 44, at present regional secretary for the New Territories. Two other secretaries' posts are being taken over by local civil servants.

• Six Chinese crew mem-

Six Chinese crew members were killed yesterday morning when a Trident airliner of the Civil Aviation Administration of China crashed in poor visibility into the harbour alongside Hong Kong's Kai Tak airport.

### Asian immigration issue divides Australia

Chris Sherwell reports on a groundswell of opinion against cosmopolitan tolerance

body politic, disturbing the psyche of whole sectors of the country's 16m population. The issue is immigration: specifically Asian immigration. And it is sensitive enough to divide

it has already opened a split within the opposition Liberal Party, which with its National Party coalition partner has made most of the running on the issue. A concerned Mr Bob Hawke, the Labor Prime Minister, has beefed up the post of immigration Minister.

Opinion polls show huge majorities in favour of slowing down Asian immigration, and the spectre of racism looms. Slogans such as "Asians out" can be seen on roadside rocks up the New South Wales coast. Talk-back radio shows confirm the sentiment. One well-known commentator's car was daubed with a swastika after he attacked the coalition view. Among local Vietnamese, Chinese and Japanese there is deepening anxiety about the debate. Abroad Mr Lee Kuan Yew, Prime Minister of Singapore, has said it threatens Aus-

tralia's standing in Asia. Of course, immigration is not new as a political issue in Australia. A hundred years ago the New South Wales govern-ment tried to prevent the land-ing of Chinese immigrants.

IKE A swelling boil, an The White Australia policy it criticised existing policies. It said current selection surfaced on Australia's In the 35 years following the mechanisms would produce Second World War, millions of Europeans streamed in. Up to half came from the UK and Ireland, reinforcing the dominance of Anglo-Celtic peoples in Australia. For much of this people other Europeans were neriod: other Europeans were the victims of prejudice.
Latterly, the proportion of

Asian immigrants has increased markedly, to above 30 per cent of the annual influx. But overall the numbers remain tiny; on one calculated the state of the state lation they will comprise less than 10 per cent of the popula-tion until far into the 21st cen-

Over the past two decades, both sides of politics have adopted a bipartisan position on immigration and promoted "multiculturalism" - in effect, a tolerant, cosmopolitan Aus-

ralia.
Yet in the space of a few months the Liberal and National parties have called it into question. "One Australia" is what they now stand for, and "social cohesion". The trouble is, everybody is reading more into it.

That the subject surfaced as a public issue was perhaps inevitable. A specially-commissioned government inquiry on immigration headed by Mr Stephen Fitzgerald, former ambassador to China, published its findings in May, and

tens of thousands more immigrants than the planned pro-gramme, and that there was insufficient attention given to potential migrants' labour mar-

ket skills and business talents. More importantly, it warned that public support for immigration was threatened by widespread mistrust and fail-ing consensus. The immigration programme was not identified in the public mind with the national interest, it said. Such suggestions were like manna for the opposition. Hav-ing seen the Labor Govern-

ment steal its economic policies, this was an issue which would distinguish the coalition from the Government and find broad support. efore the report's publi-

Ecation, opposition fig-ures began talking more about the issue, saying in par-ticular that the "cultural com-patibility" of migrants should be taken more into account. Mr John Howard, the Liberal leader, began advocating an increase in skilled and business migration.

Over subsequent weeks, Mr Howard began rejecting multiculturalism as aimless and divisive, saying it should be changed. Having made immigration a political issue, he took it a critical stage further

earlier this month with a calculated comment about Asian nomically insane".

The coalition finally con-

If the level of Asian immigration was too great "in the eyes of some in the community," be said, "it would be in our immediate term interests and supportive of social cohesion if it were slowed down a little so that the capacity of the community to absorb were greater." The result was raging argu-

ment. Some pointed out that a greater emphasis on business and labour skills would actually entail more Asian immigrants. The opposition was accused of being racist and wanting a discriminatory immigration selection policy.

The real trouble came when two senior National Party leaders explicitly urged curbs on Asian immigration and suf-fered no reprimand. For those "small I" Liberals content with two decades of bipartisanship

with Labor, it was too much. The coalition had not yet finalised its immigration platform, and they spoke out loudly. As the Liberal Party began tearing itself apart, the issue looked like backfiring, and Mr Howard banned further

public statements.
Labor, having held back in the hope that the issue might bring down Mr Howard, began "morally repugnant and eco-

firmed its new position this week - different from Labor's. but a compromise the opposi-tion can apparently live with. Any government, it said, must reserve the right from time to time to vary and alter policy, including adjustments to the size and composition of the immigration programme in response to changing requirements, be they social, economic, political or humanitar-ian". At the same time it

people for immigration to Australia "regardless of race, religion or origin". gion or origin".

To test the opposition, Labor on Thursday put forward a motherhood motion in both houses of parliament calling for a commitment that "race or ethnic origin shall never, explicitly or implicitly, be among" the criteria to determine the composition of the migrant intake.

declared that it would select

migrant intake.

Mr Howard let it go to a vote, and Labor pulled in a handsome haul of three Liberal MPs and one Senator who crossed the floor. Two others abstained. Today the Liberals and Nationals insist all is well, and are standing their ground. But Australia's politicians have a tiger by the tail. No one cares to predict where it will exploiting the strains. Prime cares to predict where it will take them, or for that matter discriminatory policy would be

### Press law outrages **Indian opposition**

By K.K. Sharma in New Delhi

THE Indian Government ment is believed to have lost yesterday came under fire from opposition parties, constitutional experts and journalists for legislation rushed through partiament this week which is seen as an attempt to muzzle newspaper reporting on cor-

The legislation seeks to iail and fine journalists who are guilty of an "aggravated form of defamation". Its critics claim it is intended to silence newspapers and deter them from publishing investigative

Such reports have seriously such reports have schoolsy embarrassed the Government for the past two years. They have been published by a num-ber of national newspapers after painstaking investigation into allegations of payoffs and kickbacks in defence and other alleged there were payoffs in the \$1.4bm contract for howit-zers from Bofors of Sweden and in a deal for the purchase of German submarines and, most recently, payment of illegal commissions by Sumitomo of Japan in a pipeline deal with the government owned Oil and Natural Gas Commission. Mr Rajiv Gandhi's Govern-

considerable support as a result of the allegations in the past two years. People close to the Prime Minister whose names have been included in the reports has been gravely

meant to preserve and promote truth. He also said it would raise the level of political debate in the country and curb vested interests who were using newspapers to make

Showing a rare unanimity, all the leading national newspapers yesterday published editorials attacking what the Times of India called a "Draconian bill". The Times particular larly criticised the definition in the bill of any "imputation" about a person as defamatory if it is intended to harm the reputation of a person or if the publisher has reason to believe that it could cause harm. Even worse, it puts the onus of proof that no defamation was caused upon the accused," the newspaper said.

#### The defamation bill was rushed through the lower house of parliament late on Tuesday. Mr P. Chidambaram, Minister of State for Home Affairs, maintained that it was

#### **UN chief seeks** Iran-Iraq talks chairman By Andrew Gowers in

MR Javier Perez de Cuellar, the United Nations Secretary-General, plans today to appoint a special representa tive to pursue his laborious mediation efforts between fram and iraq, which remained stalled for much of yesterday over an Iraqi demand for guarantees of freedom of navigation.

The increasingly frustrated Secretary-General was hoping to relaunch ministerial talks last night with a delicate compromise attempting to balance lraq's concerns about navigation with Iran's desire for a withdrawal of Iraqi troops from its territory.

Mr Tario Aziz, Iraqi Foreign Minister, is demanding that Iran abandon its right under international law to search iragi shipping in the Gulf while a formal state of belligerency continues. He also wants an assurance that Iran will not block clearance of the disputed

Shatt al-Arab waterway. Mr Perez de Cuellar would like to suspend negotiations and resume them in two or three weeks, presumably under the chairmanship of his special representative.

# General strike

Armed soldiers loyal to Gen
Ne Win, Burma's key military
and socialist party leader,
have tried to break a strike at
the country's higgest oil refinery at Syriam which has led
to scarce fuel supplies.
The soldiers searched suburbs of Syriam for engineers
to restart the refinery but

to restart the refinery but failed, diplomats said.

### called for across Burma

By Richard Gourlay in Bangkok

BURMESE opposition groups have called for nationwide general strikes and big demonstrations again today, to add to the pressure on the one-party government for a return to democracy, diplomats in Rangoon said. Broadcast vans moved freely

Broadcast vans moved freely through streets abandoned by the army and police announcing the action, while students and monks continued the marches through Rangoon that have helped bring the 28-year regime to the brink of collapse.

Armed soldiers loyal to Gen.

U Nu, who led the last civilwind with the last civil-ian government until Gen Ne Win seized power in 1962, told Reuters he would announce today whether he would lead the opposition alliance that was formed on Monday was formed on Monday.

#### S African churches' HQ bombed By Jim Jones in Johannesburg

A BOMB explosion severely damaged Khotso House, the central Johannesburg building housing the offices of the South African Council of Churches and other leading anti-apartheid and human rights groups, in the early hours of yesterday. The blast injured 23 people in the densely populated, multi-racial city neighbourhood.

The police have said it is pre-mature to speculate on links between the explosion and

another which destroyed the nearby office building of Cosatu (Congress of South African Trade Unions) over a year ago. A recent fire set by arsonists gutted the Johannesburg offices of the Transport and General Workers' Union.

The police have not yet apprehended those respons for any of the earlier attacks. Mr Frank Meintlies, Cosatu's information officer, believes it unlikely the bombers would be

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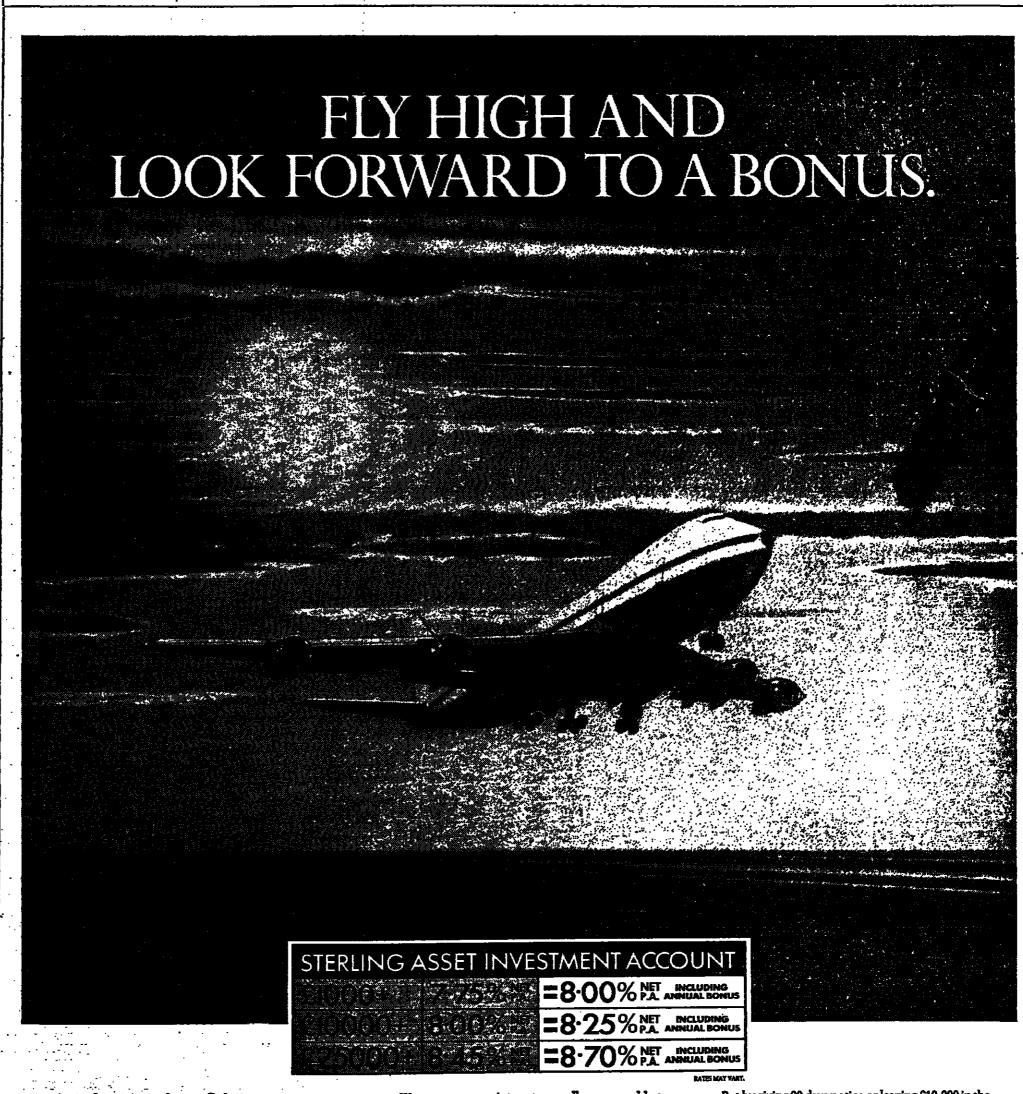
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But by giving 90 days notice or leaving £10,000 in the account after withdrawal, you'll only lose your bonus.

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your local branch ABBEY



By Sarita Kendall in Quito

ECUADOR'S new government has announced an emergency plan as the first stage towards putting the economy in order and reducing inflation from 60

to 30 per cent.
Outlining the most important measures, Mr Abelardo Pachamo, head of the Monetary Board, said the crisis was much worse than the Government had imagined, and the outgoing administration had manipulated central bank fig-ures to cover up the fact that Ecuador has no foreign

reserves. The central bank sucre has been devalued from 250 to 390 sucres to the dollar. This exchange rate will apply to all private export transactions which have been moved back into the central bank. Gradual devaluation will

continue, at 2.50 sucres a week the equivalent of about 30 per cent a year. The free market has been swinging between 500 and 550 to the dollar in recent weeks, so there is still a substantial gap between the two

Vehicle imports have been prohibited and capital goods can only be purchased if they have financing from multinational organisations. Prior deposits have also been reinstated for a short time.

The Government hopes to save \$450m by reducing imports and in addition, 10 per cent of private export income will go towards strengthening central bank reserves. To cut the public sector's budget deficit, now running at about 16 per cent of Gross Domestic Product, the Government has doubled ordinary petrol prices and raised electricity tariffs.

The emergency plan includes a series of measures to cushion usterity: the prices of some foodstuffs have been frozen and new employment, health and other social programmes are to be introduced. A small wage increase will be financed by taxes including tax on ciga-

Although the measures are expected to be criticised by both left and right, indepen-dent economists recognise that the Government has shown courage by adopting politically unpopular but necessary poli-

### Argentine politics takes on a visibly Byzantine air

Gary Mead describes the case of the Peronist and the Radical with nice things to say about each other

RGENTINE political life is packed with rich delights but perhaps none quite so visibly Byzantine as the affection which Mr Carlos Menem, the Peronist presidential candidate, has discovered in himself for Mr Rodolfo Terragno, the Minister of Public Works. There seems little common

ground between an old-style union-backed Peronist (Mr Menem) and a free-floating, former journalist turned publishing entrepreneur who now works for the Radical Party government (Mr Terragno). Last week they both attended the ceremonial openfor residents of a district in the province of La Rioja, of which Mr Menem is governor. With unprecedented warmth, Mr Menem described "my friend Terragno" as "a talented man" who is trying against impossi-ble odds to achieve development and growth in Argentina's economy. Mr Terragno expressed similar delight at being in the company of Mr Menem. Like adoring adoles-cents they agreed that, while they have differences, their The altered atmosphere



sus politics in Argentina, con-sidering that trade unionist supporters of Mr Menem amused themselves only two

might appear to signal a Terragno with the most rotten remarkable return to consenvegetables and, in one incivegetables and, in one inci-dent, a second-hand tollet. Considering also that Mr Terragno's schemes to sell off large chunks of Argentine months ago by inventing a new state-owned and financially national sport: who can hit Mr broke industry is - or has

been - utterly loathed by the Peronists (whose hero, the late General Peron, set the whole state machine rolling in the first place), the whole affair becomes almost inexplicable.

But not quite. The explanation lies in Scan-

dinavia. Money speaks louder than party allegiance in Argentine politics, and these days there's an awful lot of money floating around the deals Mr Terragno is trying to clinch with regard to Argentina's national airline, Aerolineas, and its telephone system. and its telephone system,

He claims to have sold 40 per cent of the former to Scandina-vian Air Systems (SAS), for vian Air Systems (SAS), for \$204m (though that figure is disputed by those close to the deal); and he hopes to persuade the Spanish telephone com-pany Telefonica to help him out with Entel. Both Entel and Aerolineas hadly need investment and

badly need investment and professional management, but the Peronist position until now has been that Mr Terragno is simply interested in selling the country to nasty foreigners. Mr Menem's supporters in Congress have even accused Mr Terragno of shady deals in the two ventures.

The Peronists have threat-

ened to prevent both deals from passing through Congress, where, in the Senate, they have a majority. The Radical Party Government needs to achieve success with both SAS and Telefonica to demonstrate the prevention of the second seco

strate to the nation that it has some reason to vote for the Radicals in the 1989 presiden-tial election. Until now informed observers have cast doubt on either of the two deals ever getting past Peronist

But the Peronists, who are riding high in the opinion polls and confident of victory in 1989, are relaxing their view of Mr Terragno's semi-privatisa-tion schemes. Their thinking is that if they are going to win anyway, why make a political issue out of economic changes which might actually bring some much needed capital into useless state enterprises?

hey can hardly afford to back down from their clearly stated public position that the deal stinks. It only needs the absence of a few Peromist senators when the formal SAS-Aerolineas debate takes place to ensure its relatively cally neesses. tively calm passage.

A new Argentine joke, sadly

without its punchline: How much does an influenza virus cost which can lay low half a dozen Peronist senators at one

### PRI move renews election dispute

By David Gerdner in Mexico City

A NEW electoral row has erupted between Mexico's ruling Institutional Revolutionary Party (PRI) and the opposition as both sides gathered in Congress for President Miguel de la Madrid's final state of the union address today.

Rarly yesterday the PRI allocated itself more seats in Congress than it would seem entigress than it would seem enti-tled to. It thereby reached the majority of 20 seats it obvi-ously feels is the minimum safety margin it needs to ratify its candidate, Mr Carlos Sali-nas de Gortari, when Congress comes to vote on the results of July's presidential election.
PRI deputies overrode the multi-party commission charged with apportioning the 200 proportional representation seats of the 500 member Congress, which now becomes constituted as the full electoral college. At the beginning of the week, in complex horse-trading designed partially to under-mine opposition claims of bal-lot-rigging, the PRI "conceded" lot-rigging, the PRI "conceded"
13 first-past-the post seats in areas where electoral fraud was most patent. They then took back the same number of seats from the proportional representation allocation. But they did not subtract the votes they conceded they had not won in the first groun of seats won in the first group of seats, and left their percentage of the congressional votes at 52 per

This guarantees them 260 seats, against 240 for the combined opposition, when the ruling party would have ended up with 251 to 255 seats had the arithmetic been modified.

Throughout the complex and politically charged post-electoral process the PRI has used its dominance of all electoral authorities to impose its own interpretation of four different bodies of law which bear on the disputed results. But now, even by the most legalistic interpretation, it appears to have broken the law. This will further undermine the credibility of Mr Salinas's victory, when it is steamrollered when it is steamfortered through by the dublously con-structed PRI majority, proba-bly by September 9, and makes it virtually certain that the opposition will not recognise him as President.

### GDP rise of 4% reinforces growth trend in Canada

By David Owen in Toronto

THE Canadian economy continues to grow at a rapid clip, with the country's inflation-adjusted gross domestic product rising at an annual rate of 4 per cent in the second quarter, according to Statistics Canada figures. This compares with a first quarter increase of

The Canadian economy has now enjoyed five-azd-a-half years of uninterrupted growth since the 1982 recession Demand growth strengthened in the latest period, as personal expenditure on goods and services advanced a healthy 0.9 per cent following a marginal decline in the first quarter. Outlays on durable items such as trucks, house-hold appliances and home entertainment equipment increased particularly rapidly, in contrast to purchases of

clothing and footwear which

accumulated losses of A\$430m. At the end of 1986, an exas-perated General Motors

stumped up A\$780m to pay off

the company's debts and split it into two. The successful engine company was hived off,

and last year the carmaking arm, Holden's Motor Company,

announced a joint venture

arrangement with Toyota of

remained relatively weak. Business investment in plant and equipment continued to grow rapidly, with business outlays advancing a full 4 per cent over the quarter and 20.6 per cent from a year ago. Import volumes rose by a sub-stantial 4.4 per cent, account-

ing for more than half of over-

all demand growth. The country's current account deficit rose sharply to a seasonally adjusted C\$2.3bn (£1.1bn) in the second quarter, however, up from C\$1.7bn in the preceding period. This was despite a 22 per cent improvement in the merchandise trade surplus to C\$2.8 bn, on the back of strong sales of wheat, automobiles and chemicals. The deterioration was explained by the deficit on non-merchandise transactions,

which widened by a sharp

C\$1.2bn to C\$5.1bn. This was

due principally to a significant contraction in dividend

In the capital account, nonresidents continue to invest heavily in Canadian interest bearing instruments. In the latest quarter, such investments totalled a net C\$7.8bn, of which C\$4.4bn was in bonds and the balance in money market instruments. During this period, the buoyant Canadian dollar reached its highest level against its US counterpart While the fact that second

quarter growth increased in the face of higher interest rates last spring gives ground for optimism, the country's export-orientated resource dustries – the main engine for growth in recent months

- are now beginning to feel
the pinch from the revitalised

### Argentina obtains pledge of \$750m loan from World Bank

By Gary Mead in Buenos Aires

A WORLD BANK delegation has left Argentina after spend-ing almost three weeks in the country, with the promise, according to Argentine gov-ernment officials, of a loan of

At the same time a delega-tion from the International Monetary Fund is due to arrive this week to discuss Argentina's request for a new stand-by loan of \$1.2bn. Argentina's foreign debt currently stands at \$56bn, with repayments this year in the region of \$55bn.

of \$5bn. Discussions with the IMF for a fresh loan have been in progress for more than two months. It is thought that any new loan is unlikely to be authorised before the next general meeting of the IMF, due to be held in Berlin at the end of September. Argentina is also hoping that it can persuade its commercial bank creditors to extend fresh loan of up to \$20n. The loans from the World

Bank have yet to be authorised. They are reportedly intended for reform of the banking and foreign trade sec-tors of the Argentine economy.

At the beginning of August the US indicated its willing-ness to extend a bridging loan ness to extend a bridging loan of \$500m to Argentina, coinciding with a visit by Mr George Shuliz, the US Secretary of State. That bridging loan has yet to be confirmed. At the same time Mr Marlo Brodersohn, the Argentine Traceury Minister reseatily Treasury Minister, recently returned from a visit from Japan where it is understood

he sought a loan in the region of \$1bn. The IMF will undoubtedly take a close look at the mixed preliminary results of the new

economic plan launched by the Argentine government at the beginning of August. The measures were designed to halt a spiralling inflation rate of 25 per cent (in July) and tackle public sector spending which, officially, wastes at least \$2bn annually.

Argentina's current wave of strikes and the success of some powerful trade unions in

achieving wage increases above inflationary levels will give the IMF cause for concern over any new agreement for fresh fluoreing. It will also be interested to learn details of various banking and financial various banking and financial scandals currently causing interest in Argentina. The most prominent coucerns the Banco Ripotecario, a state run mortgage bank which allegedly has falled to shide by normal banking regulations over loans made to individuals.

#### **WORLD TRADE NEWS**

### Holden's takes up fight with Ford for Australian market

HOLDEN'S, long synonymous with car manufacture in Australia, launches a new large car today in a battle with Ford that will determine the com-

pany's future identity.
The car is the VN Commodore, based on Opel's largemodel cars and powered by an Australian-made 3.8-litre V-6 engine. It has been five years in the making, and represents an investment of A\$360m

Its opponent in this Australian "Car Wars" is Ford's suc-cessful EA Falcon, launched earlier this year and even more Australian in its design and engineering.

The outcome is important for Holden's because the com-pany is trying desperately to ensure its future after a disastrous performance over the

Originally a saddlery com-pany, Holden's fell to General Motors of the US during the Great Depression, and as its cars rose to become "Australia's Own", the company became the best-known in the

southern hemisphere. But a fateful decision in the late 1970s not to press ahead with a new Kingswood, its large family car, left the way open to the Falcon. Holden's lost its long-cherished title of Australia's largest carmaker to Ford, and within five years

USX is to sell 80,000 tonnes of tubular steel products to the Soviet Union, a deal believed to

be the company's largest sale

ever to the Soviets.

The sale, announced yesterday, is the first by the company to the Soviet Union since

the early 1970s. It was con-

cluded between United States Steel International, the wholly

owned subsidiary of USX, and Promsyrioimport, the Soviet

Union's export-import agency

been announced, but the com-

pany said it is expected to

The value of the deal has not

for metals and minerals.

**USX** wins steel products

order from Soviet Union

arms sales By Gary Mead in Buenos Aires

ARGENTINA is supplying Iran with a large quantity of arms.
Mr Jorge Carnelli, head of
Argentina's state-owned arms
industry has confirmed that a 10-wagon train left Cordoba last week for shipment to Iran. No official statements have been made concerning the pre-cise nature of the arms, but it is thought to include rifles, mortars, personnel transport and munitions, estimated to be worth \$120m.

Under the arrangement, Toyota will supply Holden's with two of its medium-sized models to be sold under Holden badges, and in turn will receive the new Commodore, also with a switched badge.

Analysts say a failure by the Commodors would prompt Toyota to seek a bigger role in the joint venture, with the aim of supplying the next large car. That in turn would mark Holden's denouement. The VN Commodore caters to Australian tastes in being wide and having a large luggage space. Significantly larger than all the previous Commodore models, it has smooth European styling and, according to the company, offers an improved ride and better handling. to Australian tastes in being

improved ride and better handling.
Mr John Bagshaw, Holden's managing director, said the Commodore had used the latest technology and met market expectations in terms of need, price and quality.

export about half the amount in the fourth quarter of this year and an equal amount in the first quarter of 1989.

USX said that it expected the deal would be just the first in "a continuing business rela-tionship." If so, it would cut

market share of Japan and West Germany which have

been selling large quantities of tubular steel to the Soviet

tion of a new competitiveness in US steel exports, spurred by the weaker dollar.

The sale is the latest indica-

Union in recent years.

### Argentina in \$120m Iran

The Argentine Ministry of Defence confirmed the arms delivery but did not go into details. It said the shipment "compiles with previously signed contracts" and that "it is not customary to inform the public of external arms deliv-

Mr Carnelli said the delivery was the last of a series due under contracts signed with Iran, and that Argentina had contracts with Iran but not trag. He said the operation was perfectly normal and that he did not understand why such sales needed to be surrounded by "sensationalism".

Argentina is a relatively small arms exporter. Nevertheless it was to the same its month. less, it wants to expand its share of the world market, particularly in the field of air-craft and armoured vehicles. It is looking for a Middle East buyer for its tank, the TAM. Last month a planned sale of 56 Tam tanks and 18 personnel carriers to Ecuador, valued at \$108m, fell through when the Ecuador Defence Ministry called off the deal for economic reasons.

Taiwan plans to cut more import tariffs TAIWAN plans to reduce tariffs on about 300 imported products as part of its attempt to narrow its trade imbalance with the West, Reuter reports from Taipei.

per cent, cover heaters, air conditioners, chocolates, teleconditioners, chocolaites, telephones, televisions, electric
fans, refrigerators and washing machines. They have yet
to be approved by the cabinet.
The Council for Economic
Planning and Development
said the cuts would help Taiwan's re-entry to Gatt.
Taiwan last year reduced tariffs on 3,600 foreign goods.

# Yugoslav 'trade broker' bridles at red tape

Judy Dempsey in Ljubljana meets a fledgling entrepreneur

ILAN Lovrencic, a former banker in Ljubliana, jumped at the opportunity of setting up his own business when the Yugo-slav republic of Slovenia lifted restrictions on private enterprise in January 1986.

The aim was to allow entrepreneurial-minded people to break away from the socialist economy. In particular, the authorities hoped to expand the much-neglected services sector. But Mr Lovrencic believes the new regulations are marred by bureaucracy and unreasonably high rates of income tax and thus hinder

Under the law, Mr Lovrencic is allowed to employ no more than five people. "That's the rule for 'selling intellectual property'," he says, adding that he has enough work for at least 20 people. Mr Lovrencic is a financial

consultant, dealing particu-

larly in the transfer of technol-Ogy.

His main work is finding customers for his clients. "If my contacts in West Germany want to sell machinery or goods to somebody in Yugo-slavia, it is up to me to find them the partner," he explains. So far, he has had few prob-

lems finding such partners. His turnover itself indicates his success. This year he expects it to reach 300m Yugoslav dinars. But his real problem lies with the foreign exchange system. For any small business, and for that matter, state-run enterprises, foreign trade transactions have to go through a foreign trade organisation (FTO). This means Mr Lovrencic is not allowed to use hard currency; he can only be paid in dinars and all transactions must be go through the bank or a FTO. With inflation running at 170 per cent a year and several

standards and to deliver on

rugoslav dinar, once a larry strong currency in the 1960s and early 1970s, is no longer, able to buy, at reasonable prices, western technology, and especially information

technology.
"We can buy it but it takes a lot of dinars and we are severely restricted in the amount of hard currency earnings and savings we can take out of the country," says Mr Lovrencic

Such a system has inevitably meant that thousands of enter-prising Yugoslavs working in West Germany and neighbouring Austria have become important as middle men. If they have the energy to deal with Yugoslav enterprises, they often try to circumvent the red tape and the maze-of

legislation.
And like those who remain

devaluations of the dinar, Mr Lovrencic reckons he is losing a great deal. Furthermore, the strong currency in the 1960s and early 1970s, is no longer, able to buy, at reasonable men resort to setting up "com-panies" in West Germany in order to retain their hard cur-

rency earnings. The strict control of hard currency is but one inhibiting factor on Slovenia's trade. Several Slovenian economists now believe trade with the West and with the rest of Yugoslavia could rise significantly if enter-prises were allowed to raise

The present cumbersome system does not allow entersystem does not anow emer-prises to raise equity or seek private investors. And it is generally agreed that the intro-duction of such a system would have far-reaching conse-quences for socialist ownership and workers' self-management, the two planks of the Yugoslav

economy and political system.

in Taiwan so that the work-

The spa is owned by the state but is respected for its good management. Yet it needs substantial capital investment. And instead of looking to the banks, the management is considering the private investor.

Nobody knows how this will According to the spanning of t believe that if such an idea gets off the ground, Slovenia could become a valuable testing ground for the private tor and in looking at new

ways to boost trade.

### Taiwan's shoemakers seek foothold abroad

Lower costs are leading the island's shoe industry to set up overseas, says Bob King

HE drive by Taiwan shoemakers over the nast year to set up man-ufacturing operations in south-east Asia and China has been interpreted as the beginning of the end of the industry in Taiwan. But nothing could be further from the truth. The increasing Taiwanese presence in countries such as Indonesia, Thailand, and China represents an extension, rather than a removal, of Taiwan's shoemaking operations.

Manufacturers are increas-

Manufacturers are increasingly realising that the higher Taiwan dollar, rising wages, and a shortage of workers have made the production of low-and medium-grade footwear unprofitable here.

So they are shifting their lower-end production to less developed parts of the region

developed parts of the region, where costs are lower and manpower is plentiful – while still maintaining facilities in Taiwan to produce higher-end The new cuts, some up to 50 shoes. There has even been a back-flow of sorts: the move offshore, prompted largely by foreign buyers who guaranteed orders if Taiwan manufacturers set up in less-costly countries has been blunted by the tries, has been blunted by the inability of factories elsewhere to produce shoes to quality

Thus, many buyers have been forced to return their orders to Taiwan, where quality and scheduling are more qual-ity and scheduling are more or less a constant, regardless of the higher price-points. The vast majority of manufacturers cannot shift their production overseas, because such a move requires capital outlays that few companies can afford. The Taiwen Protuser Manu-

Taiwan

The Tsiwan Footwear Manufacturers' Association conservatively estimates that only about 20 companies – mostly those with healthy operations on the island - have set up facilities in south-east Asia. Sherwood, a manufacturer of of Sherwood, "We've laid it out Adidas sport shoes and that company's exclusive distribu-tor in Taiwan, provides an example. Sherwood earlier this year invested 50m baht (£1.2m) for high-efficiency throughput, and we're using new systems for sewing, and on the conveyor and cementing lines." The Sherwood venture, in a state-of-the-art manufac-turing facility near Bangkok, and plans to invest an addi-tional 170m baht by 1990, when unlike other Taiwanese invest-ments, plans to source most of its components in Thailand, rather than importing them

it expects to be turning out 25,000 pairs of sporting shoes a ay. The Thailand venture, called Oriental Sports Industries, is "a completely new design using the latest in technology," says Mr Richard Rin, president

Shoe Exports US\$bn 1982 83 84 85 86 87 Source; Talvan Trade Statistics

from Taiwan. Mr Rin says his Bangkok facility will produce some components, and he expects other Taiwanese component makers to set up in Thailand as well. The company will also train about 275 Thai

force will be well-versed in techniques and standards. techniques and standards.
Pagoda International,
another Taiwanese company,
has taken a slightly different
tack. Vice-president Lanny
Chang says the company has
over the past year made
arrangements with 11 factories
in Indonesia to produce jogging
shoes exclusively for Pagoda,
and expects to sinp 1.5m pairs
worth \$6.6m from that country
this year. Pagoda has managed

worth \$6.6m from that country
this year. Pagoda has managed
to get around problems of quality and delivery by employing
Taiwanese and Indonesian Chinese managers to oversee their
operations there. "But it's not
like Taiwan – we still have to
figure on more lead time," Ms
Chang says.

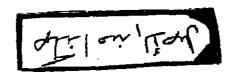
By the end of this year 10 By the end of this year, 10 per cent of Taiwan's shoe man-

per cent of Taiwan's shoe man-ufacturers — as many as 100 companies — will be operating in Indonesia and Thailand, and will thus be able to circumvent quota restrictions either imposed or contemplated by several European countries. But at least that number of companies will also be operat-ing in China — Taiwan's arch-rival in just about every fleid imaginable. Industry insiders say that Taiwan's

over just the past year from shoestring operations that involved "people who had busi-ness troubles here" to dozens of reputable companies which employ a variety of ploys to ensure their investments in Chine most Tennet's demand China meet Taipel's demand that business with the main-land be conducted only indi-rectly. As a result, more and more Taiwan shoemakers are venturing across the straits to profit from lower labour costs.

Most believe that China's

greater openness will allow them to regain profitability in lines that they can no longer afford to make in Taiwan — and that Taipei's greater permissiveness regarding "peo-ple-to-people" contacts with "the other side" means they need no longer fear retribution from the authorities. A decision in early August by 8 Tainel court serves to support this view: a judge rejected charges of sedition against a local businessman who had allegedly placed orders with Chinese factories by ruling that he had not sought to "help the enemy." He had, the court said, "only been trying to make



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and the Scottish Borders, relies group—are popular, on exports for nearly half its Mr. Geoffrey Richardson, sales. director of the NWTEC, said

on exports for nearly half its sales.

Last year wool textile that the level of overseas sales exports increased by 7 per cent to £593m, according to the National Wool Textile Export Corporation. The growth in sales was more rapid in the opening months of the year, but overseas demand weak, ened as the year progressed and the pound rose on the foreign exchange markets.

So far this year the industry is also benefiting from healthy demand in the home market. The price of wool has risen rapidly in the last year, but the industry retrenched into more expensive markets during the recession of the early 1980s and is now less sensitive to price pressure.

The only vulnerable areas – acrylic spinning and hand knitting – are suffering from in 1985.

The £1.5bn wool textile industry is also benefiting from healthy demand in the home market. The price of wool has risen rapidly in the lasty year.

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The £1.5bn wool textile industry is also benefiting from healthy demand in the home market. The price of wool has risen rapidly in the lasty year.

The £1.5bn wool textile industry is also benefiting from healthy demand.

kets, Europe and the Far East, have remained resilient. Exports to Europe, where

exchange rates are more com-petitive, rose by 13 per cent to surge of low cost imports from \$92m in the first six months of Turkey and Mexico.

DESPITE the strength of the year.

starling, the British wool texstarling, the British wool textille industry saw the value of East have been buoyant. The
its overseas sales rise by 3 per biggest for Rastern market is
cent to £313m in the first half.

Japan, where the luxury worsted cloths made by Huddersof the year.

The wool industry, which is field companies - such as Taystill concentrated in the traditional wool inwas of Yorkshire parts of the Allied Textiles

any lists and a now eas sensitive to price pressure.

The only vulnerable areas—acrylic spinning and hand knitting—are suffering from isolated problems. The trend towards more stylised, tailored clothing has reduced demand in both restree. The accretion in both sectors. The acrylic spinners have also faced a

### Hong Kong group to buy half share of new hotel

Hotels, the Hong Kong com-pany, is to spend £55m for a half share in the new London huxury hotel to be developed from the former St George's Hospital at Hyde Park Corner in London's West End. The 80-bedroom hotel will be

The hotel will be called the:

HONG KONG and Shanghai executive, said: "We have Hotels, the Hong Kong com- agreed heads of terms. We next four to six weeks."

Redevelopment of St George's for which planning consent was given last year, involves two parallel projects - conversion to a hotel and building a 150,000 sq ft office

The hospital is a London landmark. It was designed in neo-Greek style by William Wilkins, in 1826. Plans for the hotel include the restoration of

The hospital closed in 1980, but redevelopment was held up by disputes over ownership and leases between Grosvenor Estate and Imry. These were

MPs' report urges timetable for spending to reach 0.7% of GNP

# Overseas aid 'should rise to UN target

BRITAIN should commit itself figure last year was 0.28 per to a fixed timetable for achieving the levels of overseas aid recommended by the UN, says a report published yesterday by the House of Commons Foreign Affairs Committee.

The report says that although the Government is formally committed to reaching the UN target that overseas aid should represent 0.7 per cent of gross national product, spending on such programmes as a proportion of GNP has declined in recent years. The

researched further.
The RCG is an association of

the biggest retail groups, including the Burton Group,

Dizons, Granada, Littlewoods, Marks and Spencer, Next, Rumbelows, and Storehouse,

which issue credit to custom

ers using their own plastic card accounts. They have become a big competitor of

credit card networks such as

Total credit borrowed by cus-

tomers from the RCG's mem-bers who reached £1.12bn at the end of March. This was about 3 per cent of total con-

Access and Visa.

cent, against 0.44 per cent 10 years earlier.
The committee urges the emphasise the high quality of British bilateral aid. Government to set a deadline

by which the UN recommended figure should be attained. No Conservative MPs supported the recommendation, however, which was passed at a poorly-attended session of the com-mittee. Mr David Howell, the committee's Conservative chairman, said that he did not endorse the committee's call. The committee acknowl-

edges that this year's aid budget has risen by more than 3 per cent in real terms. It also accepts that ministers now

MPs on the committee were also told that the UN target of 1 per cent of GNP for a combination of state and private sector aid had been exceeded by the UK in each of the past 12 years. They recommend even so that the aid budget should rise in line with the nation's

that aid is almed properly towards investments which lead to economic development. The committee also highlights the comparatively low officers operating in South East Asian and Pacific rim countries where, it claims, 'short-sighted" undermanning

world's fastest-growing econo-The report also criticises

threatens to deprive the UK of a share of trade in some of the

full-cost fees to students from poorer countries studying in Britain This also offers opportunities for expanding British trade, it says.

Mr Howell said the committee would urge the Government to review its full-cost pol-

House of Commons Foreign Affairs Committee: Fourth Report on Expenditure by the Foreign and Commonwealth Office and the Overseas Devel-

### Growth of retailers' | Tourist industries hit by sharp slump in N American visitors

By David Churchill, Leisure Industries Correspondent

BRITAIN'S tourism industries are having to face up to a sharp slump in the numbers of free-spending American tour-ists this summer.

Figures released yesterday by the Department of Employment show that some 6 per cent fewer visitors from North America came to the IIK in June than in the same month

Although this shortfall was ess than the 13 per cent reduction in May, compared with the same month last year, it still leaves the total level of visits from North Americans down by 3 per cent in the first half of the year.

Tourism officials cite the

problems of the weak US dollar in relation to sterling as the main cause of the shortfall. However, there are also continued fears of terrorism in Europe. Americans also appear reluctant to travel abroad dur-ing an election year. The shortfall in American tourists is hitting luxury hotels, restuarants, and theatres the hardest. Many of the American tourists in the UK this summer have traded down to cheaper accommodation and spend less in restaurants and on entertaining.

In spite of the weakness of tourism from North America, the overall number of visitors to the UK in June rose by 6 per cent compared with June 1987.

### **Print union** prepares for change with Japan trip

By John Gapper,

LEADERS of the general print union Sogat '82 are to visit Japan next month to study innovations in printing tech-nology in an attempt to predict changes in working practices in the British printing indus-

Miss Brenda Dean, Sogat general secretary, said she believed the visit by a group of senior negotiators would enable the union to react coherently to any changes in pre-press areas involving robot-

Sogat leaders made a similar visit to the US to study new technology in the newspaper industry in May 1985, just before the News International dispute during which 5,000 printers were sacked - and admitted at the time that the visit was five years too late.
"There is a sea change com-

ing in printing technology and we do not want to wait until we are in the middle of it, or the water is lapping around our ankles," said Miss Dean. The trip will include visits to a variety of Japanese printing will also examine high definition television, and its possible

use in magazine printing.

By Paul Cheeseright, Property Correspondent

completed in 1990. The property's freehold is owned by the Duke of Westminster's Grosvenor Estate, while the leasehold is held by a joint venture company formed by Imry Mer-chant Developers of London and Bond Corporation of Aus-

yesterday in Hong Kong. It will be operated by Hong Kong and Mr Martin Myers, Imry chief hope to close the deal in the

block to the rear.

the Wilkins facades.

SUGGESTIONS THAT cheap sumer credit excluding mort-credit from retailers may have been among the factors fuelling the consumer boom over challenged that we have challenged to the past year which ended in the past year when the past year which ended in the previous year. the past year were challenged yesterday when figures released by the Retail Credit Group showed that lending by its members slowed down

credit business slows

in the previous year. The slowdown was the more striking because the number of credit accounts held with RCG slightly over the last financial members rose rapidly last year, growing by 28 per cent to to a total of slightly under 7m. The finding surprised even the members of the RCG which held up their publication to enable the figures to be

As a result, the amount borrowed per customer fell by 8 per cent, a real drop of 11 per cent when inflation is taken into account.

"These figures clearly undermine any suggestion that retailers have been fuelling the credit boom," said Ms Eliza-beth Stanton, director of the

ing is that people are becoming more responsible in using their store cards; they pay off their balances on them a bit more quickly than previously. But the finding was unexpected and we don't entirely know what the reason is."

### Building society repossessions fall

year, the Building Societies Association said yesterday, writes David Barchard.

BUILDING societies took 9,180 ety loans in arrears for six properties into possession in months or more has also the first six months of this fallen, dropping by 3 per cent year, 22 per cent less than in from 61,440 at the beginning of the corresponding period last the year to 59,440.

This is 0.6 per cent of all building society mortgage lend-ing. The number of loans over Possessions are now at their 12 months in arrears is 1.4 per lowest levels for three years.

The number of building soci-

### **COMPANY NOTICES**

NOTICE TO HOLDERS OF WARRANTS

MITSUBISHI PAPER MILLS LIMITED U.S.\$150,000,000 4% per cent. Notes Due 1993 with Warrants

Pursuant to Clauses 3 and 4 of the Instrument dated 27th April, 1988, the following notice shall be given.

At the meeting of the Board of Directors of MITSUBISHI PAPER MILLS LIMITED (the "Company") held on 24th Angust, 1988, a resolution was adopted for the issue of new shares by way of free distribution, the particulars of which are given below. Consequently, the subscription price of the captioned Warrants (the "Warrants") shall be adjusted, as specifically provided in paragraph 3 below.

(1) The free distribution of new shares will be made to shareholders of record as of 30th September, 1988, Tokyo time, at a ratio of 0.10 shares for each one share held. (2) The free distribution shall be made on 18th November, 1988, but the dividends for these new shares will accrue as from 1st October, 1988, Tokyo time.

(3) Pursuant to Condition 3(i) of the Instrument, the Subscription Price will be adjusted from Yen 988.00 to Yen 898.20 per share of the Common Stock of the Company effective as from 1st October, 1988, and the Company effective as from 1st October, 1988, and the Company effective as from 1st October, 1988, and the Company effective as from 1st October, 1988, and the Company effective as from 1st October, 1988, and the Company effective as from 1st October, 1988, and the Company effective as from 1st October, 1988, and 1

By: The Mitsubishi Bank, Limited as Principal Paying Agent
Outed: 1st September, 1988 — on behalf of Mitsubishi Payer Mills Limited

NOTICE TO BONDHOLDERS OF

THE SANWA BANK, LIMITED

U.S.\$ 100,000,006

**CONVERTIBLE BONDS DUE 2000** 

Pringuist to Clause 7, materialses (5) and

(C) of the Trust-Deed relating to the Bonds, notice is hereby given as follows:

The Sanwa Bank, Limited the "comeny") held no 28th August, 1986, resolutions were adopted to leave 42,000,000 new

of You 1,400.50 per abare may be subject

to individual with effect from 1st October, 1988, to tiske account of the issue of 42,000,000 min shows, to accordance with Conditions S(CN), of the Bonds, and the

leane of three series of Japanese Yes convertible Josefs reterred to is 1, above for accordance With Condition SICX(IV) of the Bonds.

adjustment to the Conversion Price as a result of the elementationed financings by

required to be made, that the Conversion

2 3/4 PER CENT.

BANQUE NATIONALE DE PARIS -ECU 100.090.000 FRN DUE 1998

Correction Notice BRISA Auto Estradas de Portugal SA Inpanese YEN 10,000,000,000 Guaranteed Floating Rate Notes 1992

In the above Notice published on 20.7.88 the Paying Agent was KREDIETBANK s.a. Luxembourgooise.

THE ENGLISH ELECTRIC COMPANY LIMITED 5%% Debenkers Stock 1984/89

espitisher, 1909.
By Order of the Board St. PORTER, Secretary

### Kleinwort Benson

Kleinwort Benson Limited announces that with effect from 1st September 1988, the mortgage base rate will be 12.4% per annum and the personal loan base rate will be 11.4% per annum.

**LEGAL NOTICES** 

DELL'AND DIGITAL LIMITED - IN

COMPANY

NOTICES

### **CITY OF LONDON PROPERTY**

The Financial Times proposes to publish a Survey on the above on

Friday 23rd September 1988

For a full editorial synopsis and advertisement details, please contact:

#### JONATHAN WALLIS

on 01-248-8000 ext 4196 or write to him at: Bracken House, **10 Cannon Street** London EC4P 4BY.

TINANCIAL TIMES

# Disruption to **Postal Service**

The Royal Mail regrets the major disruption to postal services and the inconvenience to our customers because of industrial action by the Union of **Communication Workers.** 

We are doing everything we can to restore a full postal service as soon as possible.

This unnecessary disruption is for the most astonishing of reasons - because we are paying MORE money to some of our new staff in London and the South East where we have a real problem attracting and holding on to new recruits. We need experienced people to protect the quality of service our customers expect and deserve.

The UCW opposes these payments and has refused our repeated appeals to return to the negotiating table - instead it called a 24-hour national strike.

We hope services will be back to normal shortly, but in the meantime if you need more up to date information on postal services in your area, please contact the Customer Care Unit shown in your local telephone directory under "Post Office."



By Philip Coggan

WCRS, the UK-based advertising agency, has entered a joint venture to promote soccer in the US.

A company, USA Soccer
Properties, has been formed by
WCRS subsidiary Pascoe Nally
International and C & W, a US

The well-known half of Pas-coe Nally is Mr Alan Pascoe, the former British Olympic hurdler; C & W's best-known name is Mr Phil Woosnam, the former Welsh soccer interna-

Mr Woosnam was involved in earlier attempts to promote soccer in the US, which achieved brief moments of success when stars like the Brazilian Pelé appeared for the New York Cosmos.

However, the North American Soccer League collapsed in 1985 and even indoor soccer, a version designed to produce

commercial breaks; is struggling. Nevertheless, the WCRS ven-ture is blessed with some

encouraging omens. The US recently won the right to host the World Cup in 1994. That will attract US media interest and also ensure that the US team qualifies for the final stages of the competi-

The US team last qualified for the finals in 1950.

soccer has grown substantially. According to the US Soccer Federation, there are about 15m soccer players in the country and there are more men's colleges playing soccer than American football.

WCRS is providing financing of about \$2m (£1.2m) for the new company and believes it will have a turnover in excess more goals and more television—of \$60m over the next six years.

NatWest's Japanese invest

ment banking arm, County NatWest Securities Japan,

which is a member of the

Tokyo stock exchange, will participate in the marketing of the issue.

for their shares in major over

seas markets in the US and the Barclays and Standard Char-tered are both listed in Tokyo.

Hard times in Tokyo,

nature of our busin

### NatWest to seek listing in Tokyo

NATIONAL Westminster Bank is to raise £100m by seeking a listing for its shares on the Tokyo stock exchange and making a public issue in the Japanese market.

Plans for the issue were originally announced last year, but were later postponed because of the October stock

NatWest will be issuing 20m shares, equivalent to 2.6 per cent of the shares outstanding. The exact terms have yet to be decided, but the bank said yesterday the proceeds after fees, taxes and expenses would be about £100m. The issue will probably be made early next

The listing will have to be approved by Japan's Ministry

The application is being tered an sponsored by Nomura Securities, which will also lead a Page 20

**Building** societies 'have duty to tell all'

By David Barchard

BUILDING SOCIETIES planning to convert into pub-lic limited companies have ite ilmited companies have received a fresh warning from the Building Societies Commission that they must ensure that their members are fully informed of the disadvantages as well as the benefits of the change before they vote on it. The latest warning comes in the annual report of the Commission, the regulatory body of the building society industry, published yesterday.

Much of the report discus the capital strength of the building societies and ways of increasing it. This is the issue at the heart of the debate over whether building societies should drop mutual status or not. It is essentially about whether building societies need equity capital to grow.

Most of the report will give heart to those building societies firmly committed to remaining mutual organisa-

The Commission says that almost all building societies will be able to meet interna-tional capital adequacy requirements for banks due to come into force after 1992.

come into force after 1992.

The report suggests that all the leading building societies have capital ratios well above the minimum levels laid down by the Basle Committee on banking regulation and supervision.

It says that the top 15 societies have risk-to-asset ratios averaging about 9.3 per cent and that the next 35 largest societies have even stronger ratios of about 11.4 per cent. The Commission goes on to

Lord Boardman, NatWest's say that it is willing to conchairman, said yesterday:
"The listing will give us access
to the world's largest equity
markets and allow 24-hour sider allowing new ways for building societies to raise extra capital, either by borrowing new forms of long-term debt or by issuing shares akin trading in the bank's shares, reflecting the worldwide to equity shares in a company. It notes that building societies in Australia have already NatWest's move is the latest in a series of steps by UK-based banks to obtain listings and ways to do this.

Its message to those societies contemplating conversion, however, remains stern. It says that they must not treat the operation of informing members about the change as "a marketing exercise" and that if they merely inform them about the benefits of incorporation, permission to go ahead with it will be

Although the Commission says that it is neutral in its attitude to conversion, the report was attacked last night by Mr John Wrigglesworth of Phillips and Drew, the City of London securities house, for

taking sides against it.
"The tone of the whole report shows that the Commission is not neutral on building society incorporation," Mr Wrigglesworth said.

A DECISION on increasing

airport capacity will be on the political agenda by the end of the century as attempts are made to meet growing demand for air transport, Mr Jeremy Marshall, BAA chief executive, told the Financial Times con-

ference on commercial aviation

yesterday. Mr Marshall warned that the

Government's yearly limit of 78,000 take-offs and landings at Stansted, the airport north-east

of London designated as the capital's third, "would have to be lifted to realise the full

capacity of 15m passengers at the new £300m terminal."

"This issue is likely to be put on the political agenda by pres-sure of market forces," Mr Marshall said.

BAA, the privatised airport group formerly the British Air-ports. Authority is looking

ports Authority, is looking beyond these plans towards

increased capacity by the end of the century. Passenger traf-fic will double at BAA airports within 15 years and the group

expects to recommend new air-

Company, London



### Postal union leaders consider further disruptive action

LEADERS OF the UCW postal workers' union are to meet this afternoon to consider further industrial action after a 24hour strike yesterday by the majority of the Post Office's parcels and letters staff.

Options include overtime bans, working to rule and strikes by groups of key work-

Mr Allen Slater, UCW executive member, said an all-out strike could not be ruled out. This, however, is thought Last night there was no sign of a thaw in relations between

the union and the Post Office, who are in dispute over pay supplements for new recruits. There were no plans for talks.

Mr Alan Tuffin, UCW general secretary, believes the Post Office is taking the first steps towards pay differentials. The Post Office said that yes terday's strike caused severe disruption and that the backlog would take several days to

However, it disputed claims by the union that 99 per cent of the 140,000 members called out had supported the strike. Mr Bill Cockburn, managing director of Royal Mail Letters,

By Jimmy Burns, Labour Staff

BRITAIN's ports could face industrial disruption next month because of a dispute over annual holiday entitle-

ments involving nearly 10,000

The TGWU transport union

is organising a strike ballot of the dockers registered under

the controversial jobs-for-life

National Dock Labour Scheme.

The result of the ballot, which calls for a series of

weekly 24-hour stoppages in the registered ports in support of improved entitlements, are

due in the last week of this

month. Under the terms of the Government's trade union leg-

Airport capacity to be political

issue 'by end of this century'



Alan Tuffin: fears start of

said the disruption was patchy. Private mail companies reported significant increases in business, although many of the Post Office's biggest cus-tomers appeared to have taken no special measures.

Ranks and insurance companies said they had relied on

islation, union leaders will have to call a strike within 28

days if a majority votes in

Docks Agreement between the National Association of Port

Employers (NAPE) and union

officials representing the dock-

The union rejected the employers' offer based on an improved annual holiday enti-

tlement from 22 days to 23 days, effective from 1989 and conditional on the application

Rolls-Royce has studied a tandem fan design as one solu-

tion which is already being

that his company forecast a

The ballot follows the breakdown earlier this month of

Ports face industrial dispute

their internal distribution systems for urgent despatches to regional and branch offices. Barclays Bank, which mails 250,000 Barclaycard statements and a similar number of account statements every day. said the stoppage was too short

to trigger its contingency plans for an emergency service.

However, many smaller organisations such as newspapers and advertising agencies resorted to courier and express services for urgent deliveries.
One of the major gainers was Red Star, the parcels service operated by British Rail, which is in direct competition with the Post office's strike-bound

Mr Colin Goodall, Red Star's resources manager, said the number of cash customers was up by between 70 per cent 100 per cent around the UK.
TNT, the Australian-owned

transport and distribution group, said it expected many of its temporary customers to des-ert the Post Office system. TNT is one of a handful of private companies which claim

they could compete with the Post Office if the existing monopoly of letters was abol

of cashless pay at local level. Union officials have been

### Tests in £1.5bn job training initiative see 55% failure rate

By Charles Leadbeater, Labour Correspondent

MORE than half of the trainees jects set up to test the Govern-ment's 21.5bn Employment Training programme, left before they started training, according to Training Commis-

according to Training Commission figures.

The figures cover 12 training agents who began trials in mid-May. They show that of the 1,000 trainees referred to them from Jobcentres in the first month, only 45 per cent went into training.

This drop-out rate nonetheless compares favourably with the New Job Training Scheme. About 78 per cent of people referred to that scheme from Jobcentres drop out before starting training.

The training agents for the

Employment Training programme offer unemployed job-seekers three days' counselling on their training options. Employment ministers believe the counselling should cut the high drop-out rates of other programmes by ensuring that training courses are tailored to individual needs.

Employment Training, which is launched today, is planned to provide an average of six months' training for 600,000 unemployed adults a

some of the trials exceed even the higher levels of programmes already in place. In one new town in the north of England about 75 per cent of trainees left before starting their training.
The commission said that

the trials in its 10 regions, which have grown to involve 25 training agents and 112 training managers, had shown that there was a need to improve counselling tech-

However, commission officials said it was too early to draw any firm conclusions from the trials, as they were not intended to be a complete test model of the programme. They said the development projects increasingly attracted enthusiastic trainees and training providers.

Union leaders yesterday drew up composite motions for next week's annual meeting of next week's annual meeting of the Trade Union Congress, the federation, which make it almost certain that the umbrella body will decide to boycott the programme. Such a boycott could lead to the pro-gramme's being scaled down. Union leaders opposing a hoycott believe that they will lose a ballot on the issue by by at least 200 MO wries est 300,000 votes.

The Congress seems almost certain to support a motion submitted by Nalgo, the public sector union, which calls for a policy of non-co-operation with

the programme.
Nalgo accepted an addendum
to its motion from the GMB,
general union, which says that
unions should be allowed to participate in the scheme for no more than two years, while projects are run down and staff deployed.

The addendum means that the the GMB, which supports co-operation with the programme, will vote for the Nalgo motion.

The GMB hopes that this addendum will allow unions to participate with the pro-

particpate with the pro-

**Iminis** 

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HEAD OF CE

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#### **UK ECONOMIC INDICATORS**

The figures come amid some scepticism over the development of the telephone-based information market, usually known as Value Added Net-

the sector is growing as vigorously as can be expected.

The report also suggests that
Britain will provide the largest
VANs market in western
Europe in 1995, when the
region as a whole will generate

The US market is by then expected to have reached \$20.8bn against \$4.1bn last year, while the Japanese industry will have expanded to \$9.2bn from \$978m in 1987.

work services (VANs). Some activities, such as electronic mail, have not expanded as swiftly as originally expec-Systems Dynamics, however, says expectations for the industry were inflated and that

for growth

By Terry Dodsworth

revenues in this sector of about \$9.8bn.

### Rental 'glut' in London By Raiph Atkins, Economics Staff

THE SUPPLY of homes available for rent in London has grown faster than demand in the past three years, says a survey published today.

More than three quarters of the capital's estate and letting agents have seen an increase in the number of properties for rent. However, demand has at best remained static.

The survey was compiled by Mass-Observation, the indepen-

dent research company, for Safeland, the north London property company.

Rather than suggesting that demand is outstripping supply,

accommodation has been among properties with rents in the £100- to £250-a-week hand: the lower end of the market.

pressing for an annual holiday entitlement of 30 days. They are also objecting to the issue, being linked to changes in the method of pay, which they helieve should not form part of the annual national docks OUTPUT- By market sector; consumer goods, investment goods, intermediate goods (materials and keels); engineering output, metal manufacture, textiles leather and clothing (1960-100); housing starts (000s, monthly average). The dispute highlights the The dispute highlights the limitations and potential sources of conflict in the annually negotiated agreement. This covers sickness pay, pensions and holidays but provides for pay to be negotiated at local level. 196.9 111.2 106.4 106.1 196.3 111.5 110.3 711.7 120.1 120.5 122.0 118.3 129.0 120.4 121.6 118.4 109.8 113.7 171.0 106.0 111.0 114.0 114.0 127.6 132.0 138.9 125.0 120.0 134.0 141.0 121.0 Information services set THE UK market in information services carried over the telephone network is likely to grow by between 30 per cent and 35 per cent a year until the early 1990s, according to a new +880 +679 +356 +371 +213 +309 +221 +148 +65 -2,886 -2,932 -1,939 -1,181 -689 -708 -1,184 -1,841 -2,151 study by Systems Dynamics, the market research company. The pace of growth will es in the early 1990s, the report adds, but the total market will nevertheless amount to about \$2.5bn by 1995 FENANCIAL-Money supply MO, M1 and M3 (annual sterling lending to private sector; building societies' n all sessonally adjusted Cleaning Beat here and the 29.4 +12.230 29.2 +18,797 21.8 +5,598 20.0 +2,556 20.4 +4,778 28.0 +8,218 19.1 +3,141 20.2 +6,440 20.7 +6,271 3,551 4,773 890 1,102 1,050 -1,576 1,258 1,268 1,362 ndices of earnings (Jan 1980 = 100); basic mai of manufactured products (1985 = 100); retail tim: Reutera commodity Index (Sect 1931:

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237	186	Ass. Brit. Ind. CULS	237	-1	10.0	4.2		
40	25	Arreitage and Rhodes	35	ō		-		
57	37	BB8 Design group (USM) ,,	37	ō	21	5.5	5.9	
169	155	Bardon Groop	169	ō	3.3	20	23.8	
115	100	Bardon Group Conv. Pref	115	0	6.7	5.8		
145	132	Bray Technologies	132	-1	5.2	3.9	10.6	
114	100	Brembill Coos. Pref	110	ō	11.0	10.0		
287	246	CCL Group Ordinary	284	ō	12.3	43	43	
161	124	CCL Group 11% Cody. Pref	160ml	-1	14.7	9.2	_	
151	129	Carbo Pic (SE)	150	0	6.1	4.1	9.2	
112	100	Carbo 7.5° = Pref (SE)	112xd	ă	10.3	9.2		
308	147	George Blair	307	+5	12.0	3.9	6.8	
97	60	Isls Groep	97	õ			_	
118	87	Jackson Group (SE)	112xd	0	3.4	3.0	12.4	
350	245	Mahikouse NV (AasstSE)	340	0	-		-	
111	40	Robert Jeakins	llled	0	7.5	68	2.4	
430	124	Scrottons	415	0	8.0	1.9	37.7	
233	194	Torday & Carlisle	233sus	0	7.7	3.3	7.7	
96	56	Trevian Holdings (USM)	75±6	0	2.7	3.7	8.1	
113	100	Unistrut Europe Conv Pref	108		8.0	7.4		

Securities designated (SE) and (USM) are dealt in subject to the rules and regulations of The Stock Eachange. Other securities listed above are dealt in subject to the rules of TSA

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port capacity next year.

Mr Gil Thompson of Man-chester Airport talked of the role which provincial airports could play in easing air traffic congestion. The liberalisation of air transport in Europe would generate growth, but it also placed strain on airports. "The larger regional airports

-1 16.2 5.6 7.9 These Securities are dealt in strictly on a matched bargain basis. Neither Gramille & Co no

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CONFERENCE Commercial Aviation

can make a contribution to easing capacity pressures," Mr Thompson said. Manchester planned a second passenger terminal, with the first phase to be conserted by 1999.

The Government had to accept the restructuring of the industry and airlines had to accept "rational disbursal of traffic to regional airports to avoid congestion," he said.

Separately, Mr Philip Ruffles, the director of design engineering at Rolls-Royce, UK aero-engine maker, said a future supersonic airliner would need to have substantially reduced takeoff noise, a range of 6,000 nautical miles and the ability to fly efficiently over land at subsonic speeds.

He said an engine for such a

studied for the next generation of vertical take-off aircraft to replace the Harrier vertical take off and landing jet fighter. Hence, engine technology for a future supersonic airliner could be developed from a military engine programme. Mr Selwyn Berson, the president of commercial engine business at Pratt & Whitney, one of the two main US aero-engine companies, said

to be operating by 1992. The Government had to

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compounded growth rate of 4.7 per cent in world passenger traffic. "We see airline requirements during this period for 12.800 engines and spare parts valued at about \$70bn," he The products to meet these needs were not derivative products; they were the highest technology available. The tech-nology was moving forward for the ultra-high bypass type of ducted propellors and pro-phands. Mr Berson said the development would evolution-

He said an engine for such a supersonic airliner would need to combine two types of opera-tion, high-bypass for take-off and subsonic operation, chang-ing to a lower bypass operation at supersonic speeds.

sonic airliner raised a host of "severe technical challenges in propulsion." Pratt & Whitney is looking at a "variable stream

control engine and a turbine bypass engine, for supersonic

ary and not revolutionary.
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Please write, in confidence, to Peter Purdon at John Courtis and Partners, 104 Marylebone Lane, London

# A direct line to the executive shortlist

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### INTERNATIONAL APPOINTMENTS

### Allied-Signal announces appointment of treasurer

ALLIED-SIGNAL, the US-based worldwide advanced technology group with businesses in aerospace, automotive products and engineered materials, has elected Mr G. Peter D'Alola vice-president and treasurer, and Mr. Nicholas A. Cameron to the newly-created post of senior vice-president. operations services. Both appointments became effective

appuningens because the from August 1.

Mr-D'Aloia, 43, and formerly vice-president, taxes, has succeeded Mr William F. Loffus; who has left the company to

MRS HELKN Roman-Barber

who took over as chairman of the Denison Mines Limited, the

resource group, after the death of her father, Mr Stephen Roman, early this year, has appointed a financial manager as president of the family hold-

ing company.

Mr Montrose Emerson, 56,

In his new position, Mr D'A-loia has assumed responsibility for the corporation's domestic and international finance and

pursue other career opportuni-

Mr D'Alois will continue to direct the firm's tax function. He joined the company as a tax attorney in 1972 from Arthur Young & Co.

banking functions.

Mr Cameron, 49, took up employment with the company in 1960 and has held a variety of executive positions in

Mining group names president

He will become president of Roman Corporation, the Roman family company that controls 37 per cent of Denison

Mines, the uranium, potash and oil and gas group.

Roman Corporation also

finance, strategic planning and administration. Since 1986 Mr Cameron has

served as a senior vice-president and group officer. He is now directing through the new post several corporate service groups, including health, safety and environmen-tal sciences, administrative services and information

systems and services.

Mr Cameron will also be responsible for special projects as assigned by Mr Alan Belzer, president and chief operating officer.

Earlier this month Mr Charles Parmalee, a 20-year-old associate of Stephen Roman, resigned suddenly from the presidency of Roman Corp and as vice-president of Denison Mines, because of policy differ-

ence with Mrs Roman-Barber. Mr Emerson has not worked

previously in the mining sector and he said his first task will

### **Digitext** chooses chairman

DIGITEXT, a California-based computer company, has appointed Mr Philip C. Haines chairman and chief executive. As chairman, Mr Haines replaces Mr Monty D. Kaufman, who will continue as a director of the company. The post of chief executive, has been vacant since October 1987 although Mr Haines has

served for several months as acting chief executive.

Mr Haines was the founder and is chairman and chief executive of Kmark Corporation the producer of word processing equipment and marks. cessing equipment and multi-user office automation com-puters. He will continue to serve as chairman and chief executive of Kmark, but will devote his main efforts to Digi-

MR ANTHONY P. GAMMIE has been elected to the board of directors at AMAX, US-based natural resources group. He is chairman and chief executive. utive officer of Bowater Inc. the largest US manufacturer of newsprint.

Mr Gammie was elected chairman of Bowater in 1985. He has been president and chief executive officer since the company was listed on the New York Stock Exchange in

### Finnish commercial bank strengthens management team

By Oili Virtanen in Helsinki

KANSALLIS-Osake-Pankki, the Finnish commercial bank, has appointed two members to its board of management as of September 1, 1988.

Mr Pentti Rissanen, 45. will be senior vice-president respon-sible for group audit, legal affairs, contacts with the regulatory authorities and monitoring international legal develop-

Rissanen, who is currently senior vice-president in KOP's Investment Banking organisa-

investment Hanking Organisation, will largely assume the
position of Mr Simo Kärävä,
who retired in July.
KOP also appointed Mr Peter
Fagernäs, 36, as senior
vice-president responsible for
investment banking. He
replaces Mr Jukka Härmälä,
who left the bank to become managing director of the Finn-ish forest industry group, Enso-Gutzeit. Fagernas is pres-ently managing director of Kansallisbanken, KOP's Stockholm subsidiary, which will be wound down following the deal in which KOP bought a sub-stantial share of Gota, the Swedish banking group earlier

Enso-Gutzelt, the Finnish state-controlled forest products top management.

From the beginning of next

month, Mr Jukka Hārmālā, 41, will become managing director and chief operating officer. Mr Pentti Salmi, current managing director, will be chairman of the board and

remain chief executive, concentrating on corporate strategy. Mr Härmälä is current executive vice-president for investment banking and a member of the board of directors at Kansallis-Osake-Pankki, Finland's leading commercial bank.

drugs and packaging group,has appointed Mr Timo Pekola, 42, as president and chief execu-tive officer of the group as of

July 1, 1989. He will succeed Mr Asko Tarkka who will be chairman of the board from that date. Peltola is currently executive vice-president in charge of Huhtamaki's food operations in Finland as well as corporate planning and public affairs.

### owns 26 per cent of Lawson Mardon Group, the international packaging company, 100 per cent of a paper products group, and interests in financial services. chief financial officer of Pro-ter & Gambie Canada, has spent 32 years in the consumer products industry. be to "get in and understand the business and review it with

**ACCOUNTANCY APPOINTMENTS** 

Sun Microsystems is rapidly emerging as one of the major forces in the computer industry. Established in 1982, we are already a \$1 billion worldwide supplier of advanced CINIX based "workstation" technology and have doubled our turnover in the past 12 months. In the CIX alone, we have business valued at \$80 million, which is expected to increase dramatically as we establish ourselves in further key markets.

Finance & suitably qualified Financial professional to assume responsibility for the direction and development of accounting and administrative operations within the UK and Sweden. The department is currently 40 strong and organised under 6 managers, all of whom will report to you. Functions include Accounting, Financial Planning 6 Control, Distribution, Legal and Real Estate.

Administration This will be a highly challenging role, reporting directly to the UK Managing Director. It will demand drive, adaptability and first class professional skills, and ideally a recognised accountancy qualification. for should also have at least 10 years experience, preferably gained within a hi-tech sales 6 marketing environment.

An accomplished communicator with the ability to take an active part in customer negotiations, you will have excellent man-management skills, presence and the capacity to develop with a business which is rapidly expanding.

to £50K+car Aged at least 35, you are now looking for the opportunity to influence a growing international business long-term at senior levels, which is precisely what we are able to offer. These will be a salary negotiable to £50,000 and an attractive stock option as part of a comprehensive benefits package. For a confidential initial discussion please telephone John Hall on (0276) 62111. Alternatively send full career details to him at Sun Microsystems ClK Ltd, 31-41 Pembroke-Broadway, Camberley, Surrey GU21 TYB.

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this year.

c. £18,000 + car

Rhône-Poulenc is the tenth largest chemical company in the world. Recent years have seen a dramatic growth in the company both organically and through acquisition. This expansion is reflected in the success of our Healthcare Division which has an annual turnover in excess of \$130 million and operates in 140 countries throughout the world. It is within this division that a promotion has opened up the opportunity for an ambitious management accountant.

The emphasis of the position is on the provision of effective management information to senior business managers, particularly within the context of our overseas subsidiaries. This will involve you in the critical review and analysis of activity within the division, making recommendations and proposals to Professionally qualified, CIMA or ACCA, you should have 2-3 years' broad-based experience in agement accounting. From a multi-national background, ideally in manufacturing, you will have had

management accounting. From a multi-national background, sceany in manufacturing, you will have not exposure to dealing with overseas subsidiaries and appreciate the impact and risk involved in currency fluctuations. At Rhône-Poulenc we use the highly advanced WIZARD spread-sheet system, on which full training will be given, you must however be familiar with financial modelling systems.

We can offer an excellent salary together with all the benefits of working for a major multi-national company including a company of working for a major multi-national company including a company car, private health insurance and assistance with relocation, where appropriate. Career prospects are first-class within the company world-wide. Please write with full details to: Mr B McCann, Personnel Department, Rhône-Poulenc Ltd, Rainham Road South, Dagenham, Essex RM10 7XS.



### **HEAD OF CORPORATE FINANCE**

Camberley

£25 - £30,000 + banefits

This is a unique opportunity to play a key and high profile role in the planned expansion programme of a major firm with a strong presence in the North West and whose impressive record of success and dynamic growth in recent years has been enviable.

As Head of Corporate Finance you will be expected to contribute effectively both in terms of planning and implementation and in bringing deals to a rapid and positive conclusion. Other key responsibilities will include effective management of a small but highly professional team, new business development and the establishment of effective relationships with the city's financial institutions.

You will have a successful track record to date which should include experience within a financial services or merchant banking environment. innovative skills, financial muscle and a high level of energy and commitment are viewed as vital personal qualities as is your ability to handle client relationships at a senior-level.

Success in this role will guarantee you excellent career prospects within this forward thinking dynamic firm and includes potential for equity participation. Salary is negotiable with the above envisaged as a starting point, however, it will not prove a barring factor for the right candidate. Benefits include quality company car, pension scheme, BUPA etc. To apply in the strictest confidence, please telephone or write to Mary Byrne

at the address below. STARK BROOKS

ASSOCIATES LTD

This immore owned venture capital Group, provides constituinty and general financial services and engages in enterprise equity investment. As Group Controller, reporting to the Chief Reccutive, the role has two elements. Pirsity, providing all accounting information for the Group and assistance and advice to subsidiaries. Secondly, corporate finance work: analysis and investigation of specific companies, and the development of financial service activities. Candidates must possess French language shifty and knowledge of French accounting systems.

But growing, commercial service company, with immover in socials of 250 million, seeks to recruit a qualified Accountant for their Head Office in Central London. Controlling a team of 10 staff and reporting to the Finance Director, responsibilities will embace all great of finance, including management and financial reports; budgeting, forecasting, analysis, industry returns and systems development. Candidates should be aged 26-35, with a hands-on approach and a foresful but testful character. Systems and staff management experience are essent

Please apply directly to Richard Holland at Robert Half, Freepost, Water Thouse, Bedford Street, 418 The Strand, London WCZR OBR. Telephone 01-836 3545, evenings 01-348 1173.

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#### GROUP FINANCIAL CONTROLLER to £40,000 + excellent benefits LONDON

Our client is a quoted group of companies specialising in asset fmance, property fmance, development capital and investment services. Their growth record speaks for itself; profits have more than trebled over the last five years, based on a commitment to expand the business both organically and by acquisition.

The related expansion of the finance function has created the need for a Group Financial Controller, a new appointment, reporting to the Group Finance Director and with responsibility for a Chief Accountant and a team of Divisional Controllers. Key aspects of the role will be:

- Coverall control of
- Budgeting/Planning

■ Tax Planning

- Statutory Reporting Ad hoc acquisition
- Treasury and cash flow

communication skills to liaise at senior levels, both internally and externally, and the ability to manage the finance team. An energetic and ambitious style will need to be supplemented by a resilient and determined

The remuneration package is negotiable and includes a basic salary of up to £40,000, executive car, profit related bonus of up to 20% and a subsidised mortgage after a qualifying period.

In the first instance, please write in confidence enclosing a full curriculum vitae, quoting reference 404/1, to Jonathan Williams, Charles Barker Selection, 30 Farringdon

This is a significant position leading to appointment as Finance Director of the FLC based on ability and performance.

Applications are invited from graduate ACA's with a 'Big 8' training and subsequent track record of success in a growth orientated

commercial/industrial environment. You will have the presence and

Street, London ECAA 4EA.

Executive Selection & Search Consultants

CHARLES BARKER

### BUSINESS PLANNING – RETAIL

West London

ACA/ACMA

c£33,000 + Car

Our client, a dynamic and highly regarded leader in the retail sector is continuing its impressive growth record. In this fast moving environment their strategy of establishing competitive advantage results from the enhancement of product ranges combined with targeted store development.

To meet the challenge of continued expansion they have an immediate requirement for a key individual to join their Business Planning Team.

The role will involve interaction with commercial management investigating a wide range of issues including appraisal of new business opportunities, evaluation of merchandise performance and analysis of capital projects.

A commercially minded individual with financial expertise, your success will be dependent on your ability to contribute to a multi-disciplined team. Aged 29-34, you will be able to demonstrate qualities of leadership and determination combined with the ability to deal effectively with senior managers.

In this highly visible role opportunities for advancement into senior general management are excellent.

If you feel you can match the demands of this challenging organisation please contact James Hyde by telephone on 01-437 0464 or write enclosing a detailed CV to the address below.

### ROBERT • WALTERS • ASSOCIATES

RECRUITMENT CONSULTANTS Queens House 1 Leicester Place Leicester Square London WC2H 7BP Telephone: 01-437 0464

### FINANCE DIRECTOR DESIGNATE

North London £35-40k + car

Our client is a fast growing company in a dynamic expanding industry, one of UK's leading suppliers of high technology mobile communications equipment and services. It is also actively involved in the operation of national networks for radio paging and mobile radio

Reporting to and working closely with the Managing Director, the incumbent will be accountable for the management of approximately 50 staff. Responsibilities of the post will include the co-ordination of all aspects of financial accounting and reporting. Major duties of the director designate, will be the development of company computerised billing and management information systems; as well as taxation and company secretarial issues.

Candidates should be chartered accountants probably aged 35+. Previous experience of a fast moving commercial service company would be an advantage. In addition to professional ability, the position requires someone with a positive and proactive approach to achieving results, having highly developed communication and interpersonal skills; and a flexible attitude to meet changing circumstances.

In addition to the salary range quoted, other benefits are included in a remuneration package reflecting the importance of the position. Please send personal and career details to Denis Evans quoting reference F/489/E.

Ernst & Whinney Executive Recruitment Services

### **Chief Internal Auditor**

To £27,000 + Car Scheme

The London Docklands Development Corporation is already achieving significant progress in the task of the regeneration of London's Docklands. To ensure success, it is important that there is an effective deployment of financial resources towards a wide range of major projects and for the control of income generated from land

The Corporation is currently seeking a Chief Internal Auditor to lead a small internal Audit Team which undertakes a range of studies and reviews in respect of the Corporation's accounting and financial policies, project management systems and other aspects of the Corporation's work.

The organisation is energetic and values flexibility. Candidates will require the interpersonal skills that will enable them to work effectively with a number of articulate professionals and the ability to present material to the most senior levels of the

Candidates should be qualified accountants with up to four years post qualification experience in the public or private sector.

Candidates should write for an application form to: Mr. Chris Woodman, Personnel Officer, London Docklands Development Corporation, Unit A, Great Eastern Enterprise, Miliharbour, London E14 9TJ.

We intend to start reviewing applications on Monday, 19th September, 1988. An Equal Opportunity Employer.



global group and that includes the Measurement Division of Schlumberger industries which has made a significant contribution so far.

Based in Oldham, our range of measuring equipment for the water, gas, chemical and process industries is pioneering and profitable. Nevertheless, our accountants make sure we keep things in perspective which is where you come in.

Working towards full iCMA qualification you'll have had around 5 years' background experience within a Finance Department, including 3 years' at supervisory level. Here, you'll put that practice into good use, controlling staff and working on product costing, analyses of balance sheets and material/labour variances as well as producing monthly and quarterly financial

It's a rewarding role for a logical and industrious individual with a good knowledge of Lotus 123. To apply, send your CV quoting current salary to: Schlumberger Industries Measurement Division, Salmon Fields, Royton, Oldham, Lancashire, quoting

### FINANCIAL CON

ACMA/ACA 28-35 yrs.

#### Central London

Robert Walters Associates is rapidly emerging as the most progressive financial recruitment consultancy in London and the South East. In order to assist us in our next expansion phase, we are looking to recruit a Financial Controller who can demonstrate thorough accounting ability together with a strong sense of commercial awareness.

The successful applicant will have experience of fully computerised accounting systems, tight reporting deadlines and financial planning using Lotus or equivalent. This will preferably have been gained within a large corporate environment

c.£30.000 + Car + Bonus

The position reports in to the main board and has strong strategic responsibilities particularly with regard to our European expansion programme. One acquisition has just been completed in Brussels and two further European locations are due to be established within the next twelve months.

Interested applicants should call James Hyde or Mark Gilbert on 01-437 0464 or write enclosing a current CV to the address

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### INTERNATIONAL AUDIT

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to a management future

c.£24k plus car

City based with worldwide travel

Reuters is the leading world news and financial information provider. Operating in more than 170 cities in 80 countries and supplying data to 165,000 terminals around the world, our business is global, complex and fast-moving.

To meet our needs for the 1990's and beyond, we are developing a new generation of financial, administrative and management systems across the broad spectrum of the business. It is a strategic programme which will place heavy demands on the skills and professionalism of our expanding corporate audit department.

To strengthen this team we are looking for ambitious Chartered Accountants with "Big Eight" experience – ranging from recently qualified professionals to experienced audit practitioners eking new career horizons.

Whether working on your own or as part of a am, you will encounter a wide range of international assignments which can include investigations, project reviews and acquisitions. They will take you overseas for up to 60% of your time and involve frequent changes of location. Above all, they will give you a valuable insight into the Group's business, a global overview of its operations and a high profile in the eyes of senior managers throughout the organisation. Within two years this invaluable experience will make you a suitable experience will make you a suitable experience will make you a suitable candidate for an array of opportunities in a range of business areas, either within the UK or abroad. Rapid career progress is a firm prospect for those with the right blend of skill, flexibility and ambition.

The salary quoted does not include the living expenses paid for overseas trips – so its *real* raive could well be much higher. Benefits include



a company car, the opportunity to participate in the Reuter SAYE Share Option Scheme, six weeks holiday and BUPA membership. Relocation es will be paid if appropriate.

If you are interested, please write or telephone for an application form or send full details with a day-time telephone nurriber and current salary to R P Carpenter, FCA, FCMA, ACIS, Phillips & Carpenter, Selection Consultants, 2-5 Old Bond Street, London W1X 3TB. Tel: 01-493 0156 (24 hours) (Ref: 1479/FD)

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### SENIOR INTERNAL AUDITORS

### An International proving ground to enhance your future £20K + car

Our client is one of the world's larger and most diversified oil field services and engineering/construction organisations. They have exciting opportunities for recently qualified Accountants exhilarated by the challenge of training in U.K. and international accounting procedures and with the prospect of international travel.

As a Senior Internal Auditor, based in the Corporate Audit Group in London - but travelling to Group Companies in Europe, Africa and the Middle East - you will be expected to make a major contribution to comprehensive financial and operational internal audit. To achieve this, you will need sound anditing skills and an ability to communicate ideas

and audit findings to Senior Operating and Financial Management in a clear, logical and convincing manner

You should be a graduate in your mid-late 20's and preferably a qualified ACA. Exposure to our client's internationally successful operation will broaden your skills and provide your career with the spring board it deserves. We offer an extensive remuneration package which includes a competitive salary of c. £20K p.a. and a car

For an immediate discussion please telephone Graham Mead any evening this week up to 7.30 p.m. or write, with a full CV, to Moxon Dolphin & Kerby, 178-202 Great Portland Street, London W1N 6]]. Telephone: 01-631 4411.

GRAHAM MEAD IS AWAITING YOUR CALL NOW!

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EXECUTIVE SEARCH & SELECTION

#### BRETTON HALL College of Higher Education affiliated to the University of Leeds

DIRECTOR OF FINANCE Salary £28-30,000

From April 1989 the College will be a higher education corporation with charitable status and direct PCFC funding. This new post will be required to act as deputy chief executive when necessary and will be expected to take a leading role in the senior management team.

An accountant is sought with successful high level financial and management experience relevant to the accountability, information system and entrepreneurship needs of the new, more market orientated corporation.

S.A.E. (A4 size) for application details to

Clerk to the Governors, Bretton Hall, West Bretton, Wakefield WF4 4LG

Closing date 20th September

#### **GROUP COMPANY SECRETARY**

A leading South East PLC, established as a market leader in the expanding residential development market, with estimated turnover for 1988 in excess £100m, has an opportunity for a young, dynamic Group Company Secretary to Join their senior management team.

Reporting to the Director of Finance you will provide a full secretarial service to our Group of Companies and will provide a specialist accounting service to a new subsidiary Company. The successful candidate will be a Chartered Secretary or an Accountant with knowledge of secretarial practice, company law and stocks exchange procedures. In addition he/she will be in their early thirties with a dynamic approach to business, excellent communication skills, flexibility and commercial awareness.

We offer an excellent salary and a benefits package comprised of company car, private health care, pension scheme etc.

To apply sand full CV to Box A0982, Financial Times, 10 Cannon Street, London EC4P 4BY

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## Finance Director

#### **Design & Communications Group** £35,000 package + Car London

Our client is one of the worlds' leading international design and marketing consultancies with an outstanding reputation for both its creativity and the mmercial impert of its work. Over the last few years this public company has achieved a dramatic increase in the range and scale of its activities, towards an expected group turnover of £40m. The organisation has an excellent blue chip dient base and with recent acquisitions in America and the opening of new offices in Europe the expansion achieved to date is expected to

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Reporting to the Managing Director of this 27m turnover business, the successful candidate will have a strong commercial bies, playing an active part in the future planning and strategy of this high profile company. They will need a strong personality in not only dealing with the marketing and creative teams but also

strengthening the current tight financial controls and disciplines in the

Candidates will ideally be malified accountants, in their 30's who have direct hands on commercial experience within a service industry enviro Please telephone or write enclosing full curriculum vitae quoting ref: 226 to: Philip Cartwright FCMA, 97 Jermyn Street London SW1Y 6JE Tel: 01-889 4572

# Cartwright

FINANCIAL SELECTION AND SEARCH

Impressive organic growth together with an aggressive International acquisition strategy continues to enhance this Company's reputation as a European market leader in computer services.

#### Finalist ACA/CACA/CIMA c£17,500 + Benefits

As a result of our client's growth in Europe, there is an immediate requirement for an ambitious part-qualified accountant to assume the role of Financial Accountant for two operating companies within the

Based in SW London you will have sole responsibility for the preparation of monthly management reports, including budget analysis, forecast presentation and statutory accounts. Strong communication skills are essential as liaison with field controllers is

This is a demanding role necessitating a high level of technical ability; in return career progression will be excellent and study assistance provided.

Christie-Tyler

FINANCE DIRECTOR

**SOUTH WALES** Package circa £30,000 plus car Christie-Tyler PLC, the leading furniture manufacturer in the United Kingdom and a member of the Hillsdown

Holdings Group, has a vacancy for a Finance Director at one of its subsidiary companies. The company, which is based

near Bridgend, is a fully autonomous manufacturer in the

competitive area of upholstered furniture and has a

turnover of £14 million.

The successful candidate, a qualified accountant preferably

aged between 27 and 45 years, will have either been the

senior financial manager in a smaller company or will have managed specialist financial areas in a larger business and

now wishes to be responsible for the complete financial

management of a company.

Candidates must have sound commercial awareness and be

prepared to take an active role in the general management

and development of the company.

The package includes a bonus based on results together

with benefits which include a car, pension, free life assurance and BUPA.

Please apply with full career and personal details to:

P.N.T. Whiting, FCA.,

Financial Director,

Christie-Tyler PLC

Brynmenyn, Bridgend, Mid Glamorgan, CF32 9LN.

INTERNATIONAL APPOINTMENTS

Contact: Susan Wild.

#### ACA

#### Based Amsterdam then UK

The financial accounting function in many companies is often considered to be one of the less exciting areas in which to operate. In our client's current expansion mode this couldn't be further from the truth as the role takes on a new dimension involving wide exposure to issues such as European Taxation, post acquisition reviews and ad-hoc assignments in a variety of locations throughout Europe.

Based initially in Amsterdam with generous living allowances, you will then return to the UK after a period of six months to take a significant role in the centralisation of the European reporting function. Some language skills would be an advantage. Contact: Stephanie Warren.

For further information contact the consultants named above on 01-437-0464 or write enclosing brief details to the address below. If you are currently working in Europe and would prefer an initial meeting in our Brussels office contact Simon Malloni on (322) 512 6642.

#### ROBERT • WALTERS • ASSOCIATES

RECRUITMENT CONSULTANTS Queens House 1 Leicester Pince Leicester Square London WC2H 7BP Telephone: 01-437 0464

# You will impact the rapid and successful growth of UK Retail Banking by driving forward appropriate financial systems and controls and making creative input to strategic planning, budgetary and investment processes. You will probably be a blue chip trained Chartered Accountant already with relevant experience and success at senior level in a progressive commercial environment. Ref. C13051/FT. Bank

New Executive Appointments In Financial Control And **Business Planning** c £32,000, Car, Full Banking Benefits City

Reporting to the Director of Finance, UK,

### Manager

You will impact the total development of the Bank's UK activity through the establishment of a top level, disciplination proactive planning function. You will ensure the practical progression of a rolling 3 year business strategy by thorough evaluation of projects, new products forecasts and competitor and general business trends. With a good degree (perhaps MBA) you will be an incisive and lateral thinker. Business crientated, you will have relevant experience in banking or in a commercial environment perhaps as a business analyst or project accountant. Ref: C13052/FT.

Both positions offer real career potential. Male or female candidates should submit in confidence a comprehensive c.v. or telephone for a Personal History Form to, A.I.). Pegge, Hoggett Bowers plc., Pearl Assurance House, Greyfriars Road, CARDIFF, CF1 1HZ, 0222-397246,

Avon

# Hoggett Bowers

Executive Search and Selection Consultants BERMINGRIM, RARROL, CARRENGE, CARDET, GLESCH, LERDS, LONDON, MANCHESTER, REWLESTLR, MITTURGALM, SERFTELD - AVENDEOR

#### Financial Controller/ **Company Secretary**

c£19.000 + Car + Benefits

As part of a privately owned group of companies, our client is engaged in the project management and supply of equipment to process industries worldwide. Projected turnover is likely to exceed £3 million in the current financial year.

A challenging opportunity has arisen for a Financial Controller/ Company Secretary. Reporting to the Group Chairman, you will be responsible for all financial/secretarial functions, preparing responsible for all mancial/secretarial functions, preparing monthly reports, detailed cash forecasts and operating a stringent accounting check on costs against budgets. You will assess new ventures and negotiate contracts which will involve close liaison with Lawyers and Merchant Bankers. Additionally, involvement with recruitment and personnel matters will be necessary.

Aged not less than 30, you will be a fully qualified Accountant or commany Secretary with several years' experience gained in an

Company Secretary with several years' experience gained in an industrial/commercial environment. Computer literacy and familiarity with spreadsheets is essential. Experience of export documentation and personnel systems would be advantageous but by no means a prerequisite.

In addition to the salary quoted above, benefits include fully expensed 2 litre car, pension, life assurance and medical schemes and generous relocation expenses to this attractive part of the West Country.

Please write with a full career history to Michael Socha, PER, Minster House, 27-29 Baldwin Street, Bristol BS1 1LY.

PER Management Selection

Our client is a rapidity expanding quoted Company engaged in the fast moving retailing/distribution sector. Current group turnover is c£30m with an enviable growth and profit record achieved via a series of successful acquisitions and organic growth.

With exciting plans in hand including further acquisitions, they now seek to recruit a young Qualified Accountant to report to and work closely with the Group Financial Director and take full responsibility for the day to day running of the accounts function producing consolidated monthly management information for the Group. Initiatly, emphasis will be placed on the further development of computerised accounting and

To be considered for this demanding and high profile position, candidates should be able to demonstrate a successful track recent to date together with the interpersonal skills necessary to establish credibility amongst the Senior Management team. Excellent prospects for career progression exist.

To apply in the first instance contact David Lasts on 051-236 1212 or 04574-68839 (Evenings).

STARK BROOKS ASSOCIATES LTD

himself a new appointment, these two new key positions are vital elements of a farreaching and dynamic plan to reinforce the position of this major international Bank as a leader in UK Benking.

### Financial Controller

You will impact the rapid and successful

### **Business Planning**

have relevant experience in banking or in a

### STATE OF QATAR

Ministry Of Finance & Petroleum Department of Civil Servants Affairs

### ANNOUNCEMENT

The Ministry of Finance & Petroleum announces vacancies for Translators specialised in translating legal texts from Arabic to English & vice versa

Applicants should have a University degree, with at least ten years experience in the same field.

Those who have worked with International Organisations and International Companies will be preferred.

Salary will be determined according to qualifications and experience.

Applications should be addressed to: THE CIVIL SERVICE DEPARTMENT Ministry of Finance & Petroleum

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Deadline for applications will be on 30th September 1988

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The Group operates in a high growth industry and its development will be reinforced by a programme of acquisitions in Europe, now well in hand. Also because of technological change and other factors it is probable that markets will widen and grow at an accelerating

The Finance & Administration Director answers to the Group Managing Director and will; be a qualified accountant, aged between 30–50, ideally 35–45.

- hold a senior financial management position carrying responsibility for the financial control of a group of companies, and have some experience of acquisitions preferably in Europe.
- have experience, financial or commercial, of doing business overseas preferably gained in a technically-based service industry or in a contractor's organisation, or possibly in electronic or in electrical engineering. be prepared for a reasonable amount of travel in Europe.

Whilst the position is U.K. based the appointee need not be a U.K. national. Pension, health and security benefits are commensurate with the seniority of the appointment: assistance with re-location costs will be provided if necessary.

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### **Newly Qualified Management** Accountancy **Appointments**

For the first time on September 8th, 1988 the Financial Times proposes to publish a list of the Management Accountants who have been successful in the recent Stage 4 final examinations.

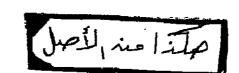
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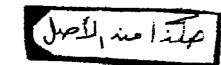
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**FINANCIAL TIMES** EUROPE'S BUSINESS NEWSPAPER



FINANCIAL TIMES THURSDAY SEPTEMBER 1 1988



# Group Finance Director

#### Swindon

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### Salary and Bonus up to £50,000 +Executive Car+Share Options

Our client, a quoted pic, is a well known and highly successful leader in its consumer goods sector, and since its to the city, its advisors and investors. start-up in 1981 has generated dramatic growth in both turnover and profits. Recent acquisitions have resulted in a group with a current turnover in excess of £30m, and substantial further growth is planned.

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management, consolidations, and representing the group

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# Group Finance Director

### S.Hampshire

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# least, Andrew Low, European

marketing services director for Kenner Parker Tonka (KPT), the US toys and games multi-national, is certain. Pan-Europeanism may be the buzz-word. But long after the European Community's internal trade barriers have been removed, Low expects that, as now, successful European marketing will depend on a sensitivity to differences in

national cultures and industrial organisation. Experience shows that if a children's toy or board game is successful in the United States, there is a better than even chance that it will also sell in Europe. But in making a third of its \$800m annual sales of toys and games, such as MASK, Real Ghostbusters,

# The creation of a unified European market in 1992 will not mean that a single market in strategy can simply be devised to cover it. Of that, at least Andrew Low European How Tonka toys with its European range The US multinational still believes in national differences. Philip Rawstorne reports

Care Bears, Playdoh, Monopoly and Trivial Pursuit, in Europe, KPT has learnt that it must modify its marketing approach as it crosses almost every national frontier.

To save costs as well as to present as consistent an identity as possible across Europe, KPT's European head office in Maidenhead, Berkshire, decides a basic marketing plan for each product. "Our role," says Low, "is to provide the product to a target cost and with as much support around it as we can generate. Television figures large in

that support. Low's group liaises with KPT's advertising agency. Grey, in developing TV commercials to cover sev-

eral national markets. It also seeks to tie other television programming into its market-ing plan. Many toys are now derived from children's TV programmes and cartoon series; and if KPT can get its toys into a market as those programmes are running, the effect on sales can be enor-

Third party licensing - the rights in spin-off products such as comics and videotapes is also handled centrally.
 And, working closely with KPT's design consultants, Barsby Prince, Low's team develops the packaging – incorporating, wherever possible, multilingual instructions and information – and the

Consolidating such activi-ties, says Low, saves money which can be used more effec-tively on local promotions. These are handled by the operating companies in each European country, which fix prices, and sell to the local trade through previews for the big-ger customers (in the UK, France and West Germany, 80 per cent of revenue comes from 20 per cent of customers) and toy fairs. The local companies also

add their own advertising, public relations and other marketing effort to the basic, centrally devised, strategy. But even as it is being devised, the basic European

strategy is constantly being adapted to the particular needs of different countries. The first question to be ecided is often whether the US brand name will translate for the European market. Wish World Kids, a toy for girls, for instance, had to be changed to Les Ali Babettes to convey some meaning to the French.

Then there are the materials Then there are the materials from which the toy is made. Germany has legal limits on the use of PVC so parts of the boys' action toy, MASK, had to be replaced with another plastic substance, Kraton. The advent of 1992 may remove problems of this kind. But there are others that will not there are others that will not be affected by the removal of

internal trade barriers. The Netherlands market, for instance, is notably sensitive to price. Dutch parents spend less on children's toys than other Europeans. If the price of a toy is judged to be too high, even the best promotion will make little difference. In contrast, a KPT game called Risk is played by three times more people in the Nether-lands than in any other European country.

Germans take their board games seriously. Advertising in that market must, therefore, be focused on the way the game is played. The French are attracted to such games, on the other hand, by more emotional appeals. "Monopoly

in Germany is a matter of getting hotels on Mayfair," Low, "In France, Monopoly is an opportunity for role playing, for fantasising."

In Germany, parents strongly reject toys associated with violence. Before the MASK toy was sold there, the brand logo, originated in the US, had to be modified to get rid of some of its weaponry. Italian children have stro traditional preferences — for dolls and dis-cast model cars. KPT must add a section to its catalogue to cater for the demand.

The catalogue must be further tailored to buying meth- ally to harmonise with each ods in different countries. In country's cultural perceptions the UK, the toy market is con-

centrated in the hands of a small number of national buy-ers. The most effective method of selling to them is by perounal previews of new prod-ucts. The catalogue is used pri-marily as an aide-memoire and need not include much detail. In France, the market is highly fragmented with a large number of independent retailers. Personal previews are given to the top 20 cus-tomers, but the annual toy fair is the focal point of the mar-keting effort, and the cata-logue must include much more detail about the products.

The toy business is highly volatile at the best of times.

"Buyers' decisions," says Low, "often hang on the an and quality of the marketing support that is being given to a brand. It is possible to com-pose a basic marketing theme, but it has to be varied continu-

### Pirelli legs it in West Germany

Andrew Fisher on the Italian tyre maker's innovative campaign

elling tyres is a tricky business. Even in West Germany, one of the world's biggest and best informed car markets, many motorists have no idea which brand of grooved black rubber is wrapped round their wheels to make their ride safe, smooth, and comfortable. What's more, they could hardly care less, especially with 40 or so makes on

To try to get their messages across, companies have resorted to sex, technology, or, in these days of subtler media persuasion, so-called lifestyle appeals. Pirelli of Italy, which has a big German operation, has done all three. In the 1960s, it displayed long, shapely female legs in its tyre advertisements. "This was regarded as really shocking then," says Ingrid Languer, an account executive with Saatchi & Saatchi in Frankfurt, which now handles the Pirelli campaign.

The company has also gone for the technical approach, stressing the characteristics of its tyres to those who may be interested. Today, however, Pirelli is doing something very different. It is now in the second year of a press campaign in which cars hardly appear. Instead, its magazine ads show a variety of bright, young, well-dressed, and prosperous looking people who appear to be moving on just one tyre each, with no need for an actual vehicle.

The aim is to put across values rather than a mass of technical detail, combining the soft lifestyle approach with brief, definite state-

ments about the quality of its tyres. "The approach is emotional rather than rational," says Languer. One ad shows a casually-dressed father cruising round a suburban corner with his beaming toddler strapped on his back. The same theme has been used in test TV spots in the state of Hesse; they were well received and Pirelli is deciding whether to show them nationwide.

Only two of the nine ads in the 1988 campaign show any cars at all. and then in the background. In one, the vehicles are barely visible in a drive-in movie. In another, an elegant young lady in a figure-hugging black suit stands helplessly beside a pink Cadillac which has broken down in the hills: the emphasis is on the dapper young man who has screeched to a halt on his tyre to help her. (Caption: "He came, saw and braked. On Pirelli.") Legs are also in evidence in this and some other ads. but not so as to shock. Pirelli's overall slogan for Germany is "Die Beine Ihres Autos", which translates somewhat awkwardly as

The Legs of Your Car". In its German operation, south of Frankfurt, Pirelli specialises in so-called wide and performance tyres, costing more than standard products. The wider the tyre, the faster a car can go with safety, though some comfort is lost. They are designed to hold up at high speeds - on most stretches of autobahn, the only limits are the driver's nerve or the state of the traffic - and to look good on upmarket cars like those of BMW, to which it is a major supplier.

"Pirelli was known as a high-performance brand with a sporty, aggressive image," says Languer. Then the image stagnated as other companies got into the performance act and the Italian company lost its exclusivity. In the campaigns drawn up by Saatchi, the idea has been to keep the sporty, spontaneous image, but try to remove any suggestion that drivers of Pirelli tyres were prone to speeding.

The 1987 ads were light-hearted. One showed a priest, also perched on one tyre, hurrying past a flock of sheep in an Italian village to get to his church. Part of the text read: "Sunday morning. Faster than the devil. On Pirelli." Others portrayed a male surf-boarder, a bowler-hatted London banker, and a young couple holidaying in the sun, all borne along on well-profiled tyres. For the 1988 campaign, Saatchi

took a different tack. Instead of doing the photography in the south of France, it went to California. The idea was to bring more realism into the campaign, with the Hollywood area providing a range of backgrounds, as well as reliable weather. Some shots were taken in the Burbank studios. To make the pictures look more

a special contraption allows the models to stand on the tyres with a hidden vertical support.

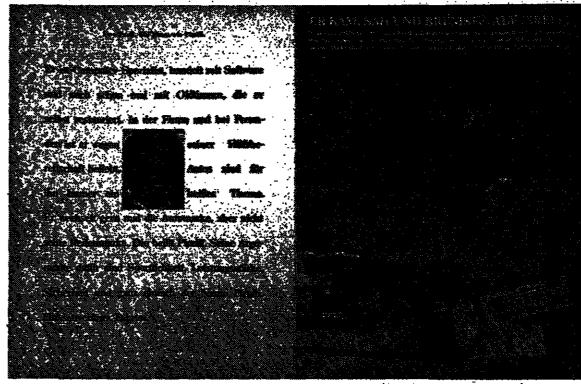
Languer says independent studies show that the campaign, seen in both motoring and popular weekly magazines, has been getting across. After the first year, 40 per cent of

realistic, Saatchi decided against the montages used in 1987. Instead,

ness of the Pirelli ads compared with 28 per cent each for Goodyear of the US and France's Michelin, and 26 per cent for Dunlop tyres, owned by Sumitomo of Japan. Continental, the German company, scored 24 per cent; it also owns Semperit (12 per cent) and Uniroyal

"We want to convince our target group that only Pirelli expresses an active, dynamic, powerful driving personality," asserts Languer. While the first ad series was meant to awaken interest and put over a slightly breathless image, this year's has delivered more arguments, expressed in three-line texts on such performance aspects as cornering, braking, and road-holding in all weathers. "Drivers need convincing arguments when they go to dealers. They're not going to say they want certain tyres just because they look good. So we want to give more information." Does all this help to sell tyres?

Pirelli, which employs 3,400 people in Germany where it had a turnover of around DM 800m (\$425m), is pleased with the response to the ads. But it is still too early to judge how they have affected sales, says Lutz Radtke, head of marketing at Pirelli in Germany. He divides the market into three roughly equal sections: freaks or fans, who are keen on motor racing and know just what tyres they want for their own driving, both for looks and performance; rationalists, open to persuasion and not just interested in cheapness; and the uninterested,



Pirelli's overall slogan translates somewhat awkwardly as "The Legs of Your Car"

wanting only a low-priced product. Since new cars are equipped by their manufacturers, which put pressure on tyremakers to keep prices down, the emphasis in the ad campaign is on the profitable ent market. Though Michelin is the overall leader, Pirelli is first in performance tyres alone, which comprise a fifth of the market. Last year, replacement busi-

ness in this segment expanded by 35 per cent to 3.4m tyres in Germany. Growth is expected to be 29 per cent in 1988, 20 per cent next year and 13 per cent in 1990 and 1991. With some 20 suppliers of perfor-

mance tyres, Pirelli is fighting hard to stay ahead in Germany. It does ing market." But the not expect to raise its 25 per cent market share by much, if at all.
"We want to grow with the total toughest in the world,"

market," says Radtke. "If we manage to do this, it will be a great success." 1 12

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**GUIDE** 

· 2011

152 to 31.5 miles

There is certainly scope for expansion, believes Languer. "Germany is a rich country with the most cars in Europe. It's a rewarding market." But the rewards are hard earned. "In its demands," says Radtke, "the German market is the

overnment representatives from about 100 countries are embarking on a five-week debate to sort out how each country can put communications satel-lites into space, by carving up the available area in a fair way.

Hanging over the meeting, which started this week in Geneva, will be memories of the World Administrative Radio Conference (Warc) session held three years ago, which saw a clash between Third World countries and the more developed ones which already had satellites in orbit. The controversy revolved around whether slots for space satellites should continue to be allo-cated on a "first come, first served"

The Third World countries argued that they should have the right to reserve satellite slots for the time they were ready to launch their own domes tic satellites. But the more developed countries, such as the US, countered with the view that the slots should go to those which already had both the technology and the money.

At the heart of the debate were the

geostationary communications satellites, which orbit the earth at a speed which keeps pace with its natural rotation, and so from the ground appear stationary. They hover 36,000 km above the equator, fixed by the earth's gravitational and tational pull.

So far, about 130 geostationary com-munications satellites are in orbit, most of them dealing with domestic and international telephone calls.

The biggest communications satellite

operators are the international organi-sations, such as Intelsat and Eutelsat, which represent telecommunications companies from a number of countries. The UK is the largest participating country in Eutelsat and the second largest in Intelsat, after the US. This ranking is measured in terms of the volume of communications traffic transmitted by the satellite and the proportion of money put into the two organisations. Despite the acrimony of the 1985 meeting of the Warc, run by the Inter-

national Telecommunications Union (TTU), the government delegations did finally reach a compromise. The satel-lite slots in the two frequencies now used for geostationary satellites (the C-band and Ku-band) are still allocated on the basis of which body books them first. That procedure involves would-be operators submitting plans to the ITU, which then circulates them to other interested parties. If there are no objec-tions, they are given the go ahead.

However, some extra frequencies have been found within the two wavebands. Called extension channels, these will be allocated to specific countries at this month's Warc. Each of the countries participating will be guaranteed its own slot. However, for every transmission channel allocated to a country under the Warc plan, there will still be two open to booking on the "first come, first served" basis.

Although the decision to give all countries the right to have their own satellite has been taken, detailed negotiations are only just beginning. One of the biggest headaches for the delegates at the conference will be to calculate



### Sorting out space for satellites

Della Bradshaw assesses the prospects for international agreement on a fair way to allocate slots in orbit

which country gets which of the specific slots now up for allocation.

Because a satellite is used for transmitting and receiving information from all the countries north and south of its position on the equator, some areas are particularly congested. Satellites are spaced about two or three degrees apart in orbit around the earth and cannot be placed closer together while operating on the same frequencies, as that would result in the signals interfering with

each other.

The section above the equator in Africa for example, is particularly busy because satellites positioned there are used for communications throughout Europe and Africa. Above the Pacific, on the other hand, there are virtually

no satellites in orbit. Officials at the conference estimate that once the parameters of the satellite slot allocations are worked out, it will still take a Siemens mainframe computer two weeks to calculate the posi-tions for prospective satellites. The delegates will then have to decide whether to accept the computer's findings.

Once those allocations are settled, some countries may decide to pool their allocated slots to form a sub-regional system. That option is supported by the UK delegation, headed by Keith Shotton, of the Department of Trade and Industry, because it would give less developed countries the ability to raise funds and put a satellite into orbit more quickly. Several European countries might also decide to pool their resources to make the best use of the

The second problem for the Warc is

The second problem for the Warc is how to improve the procedure under which companies claim vacant satellite slots, now done on the "first come first served" basis through the ITU.

One solution, suggested at the last Warc meeting, is that a multilateral planning meeting should be held every two to four years. Countries interested in launching geostationary satellites would go to the meeting to thrash out the problems. Although that argument found favour three years ago, many of found favour three years ago, many of the officials involved in the discussions now believe that in practice it would be

too complicated and lengthy a process, and would result in a new level of

Other ideas mooted range from a more effective version of the existing ITU procedure to total privatisation of

ITU procedure to total privatisation of the bidding. That would mean the country or company with the most money could buy the most satellite slots.

Although the problems look daunting, the general mood among the Warc delegations is one of optimism that the satellite slots can be amicably allocated. "One of the most encouraging things we have found is the relative unanimity of the countries represented here." says of the countries represented here," says Theodore Brophy, chairman of the US

The results of the Warc are likely to have little effect on the satellite manufacturers, although companies like British Aerospace say that any easing of congestion in the C-band is good news and could eventually lead to further orders for satellites. One reason that the extension channels in the C-band are being allocated to the less developed countries is that these are the cheapest for the operators to use, as there are no extra development costs for the satel-

However, there are advances afoot in geostationary communications satellite technology which will come into play when the popular C-band and Ku-band are saturated. Although satellites now have to be positioned at two to three degree intervals to avoid interference, that only creation if the catellites redegree intervals to avoid interference, that only applies if the satellites are using the same frequency for transmission. Satellites are being developed that will operate at much higher frequencies and much faster speeds, and so avoid interfering with existing transmissions. The C-band satellites, for example, transmit data up to the satellite at 6 GigaHertz per second (GHz/s) and down at 4 GHz/s. Satellites of the future will operate at between 40 and 60 GigHz/s.

operate at between 40 and 60 GlgHz/s. Higher speeds and frequencies would also enable each satellite to handle more information and so reduce the

number needed.

The pressure is also lifting from satellites as the most effective medium for international communications. Optical fibres, which have only been commercially available during the past decade, have become cheaper than satellites on heavy traffic routes, such as across the Atlantic. Optical fibre cables are easier to install and maintain more segment. number needed. Atlantic. Optical fibre cables are easier to install and maintain, more secure because they cannot be tapped into and more suitable for data transmission, as they do not have the time lag experienced on satellite links.

However, AT&T in the US says it will still continue to use satellite links for more remote areas and for transmission from one site to a number of others.

from one site to a number of others, point to multi-point, which is used for television transmission and private business networks.

A recent report from US market ana-

A recent report from US market analysis Frost and Sullivan predicts that sales of private satellite services to business customers will amount to \$1.2bn by 1990. In Europe, British Telecom also sees a growing market for point to multi-point transmission for business applications, particularly for companies with offices across the continent.

#### Esprit de computer

THE HARWELL laboratory of the United Kingdom Atomic Energy Authority is to lead European research into the industrial uses of "neural"

computing networks. A £3.5m three-year programme will be funded by Esprit (European Strategic Programme for informatic Technology) and compani in the UK, France, West Germany and Greece.

Neural computers mimic the workings of the human brain. The emphasis is on having many simple processing elements, each connected to every other, with information stored in the connections, rather than relying on massive compa

memory.
It is hoped that machines can be built that will learn by experience how to find the most efficient way to solve a problem, without being

pre-programmed.
The project is called Annie (applications of neural (applications of neural networks for industry in

#### Clean break for old books

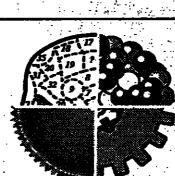
AFOS, of Hutl in the UK, is offering a fumigation chambe in which valuable old books can be safely cleaned to rid them of the pests and fungus that cause degeneration in

paper.
Books are placed in a strong, air-tight cabinet, with pages tanned out to allow Trymol gas to penetrate them. Paper mites, mould a various bacteria are killed. The unit can be purged afterwards without risk to the

#### A venture into electronic mail

A NEW company called A NEW company called international Telecom, backt by UK venture capital company 3, is to offer international "store and forward" facilities for facsimile and telex through centres in New York, Tokyo, London and, later this way. London and, later this ye

Hong Kong. In store and forward communications, subscribing companies send their ages to a local co centre. These are stored and sent at convenient times for the overseas recipients. necus deliveries can be made to 1,000



#### WORTH WATCHING **Edited by Geoffrey Charlish**

provided from which users can collect material using fax hines anywhere in the

Another facility allows local centres to exchange text with personal computers on subscribers' premises. This means material in the PC, rather than in document form, can be faxed.

Compared with public networks, international Telecom claims that its system can provide better quality (using its leased lines), faster transmission and cost savings of between 20 and 40 per cent.

#### French view of smart card ALTHOUGH the French

Government and the country's banks are enthusiastic advocates of the "smart advocates of the "smart card", the country's consumers do not take quite such a single-minded view. That is one of the conclusion of a new report, Card Payment Systems 1, from Post News, a UK market

recearch group. Smart cards look like ordinary credit cards, but include an ultra-thin compu with a memory containing
with a memory containing
the holder's account.
At a shop, the customer
plugs the card into a terminal
and keys in a personal
identification number. The
retailer enters details on another terminal and the amount owed is debited. The shop's transactions for the day are logged in a retailer's storage unit, which can be "emptied" into a bank

electronically.

The main objective is to do away with cheque books to save the banks money and

The state of the s emeri cards. Post News, based in Somerset, says that by 1990 most French consumers will lave one. But the public's reaction is mixed. Researcher Tanta Platt, who wrote the report. interviewed 200 people in Parts and found that \$1 per cent had beard of the cards.

### Of those, 41 per cent were interested in having one, while 28 per cent were Hands-on device against fraud

HAND-HELD computers, from Palon, are being used in Marks and Spencer stores In the UK to cut down on cheque card fraud and about of the store chain's own credit

carda.

Cheque card "hot lists" are regularly updated at M and sheadquarters using information supplied by banks. The data is copied on to Paion Datapaks, which are plugged into Organiser 2 band-held computers at the sile. mers' cards are

passed through the Organiser's magnetic card reader and the sales assist is alerted if the card is

Retailers have to beer risks On transactions over 250. The banks absorb losses on transactions less than that and the Midland alone says it is saving more than £5,000 a month.

#### Vehicles that use the lifts

AUTOMATIC guided vehicle (AGVs) are able to use the (AGYs) are shie to use me tifts at the Boegringer Mannheim pharmaceutical plant in West Germany. The system has been installed by Wagner Industriof Reutilingen near Stuttgar a leading German supplier of guided vehicles. A kilometra of Inductive guide of guided vehicles. A knower of knowers of knowers guide path has been set into the four floors of the building. This permits the vehicles to take supplies to and from 22 points as required, avoiding the build up of stock.

If a vehicle has to change floors, it leaves instructions to the lift over an infra-red link, it uses the lift under the link, it was the lift und ice of a central

CONTACTS: Herwelt UK, 1235 24141. Afor: UK, 0452 52152. International Telecom: London, 825 5704. Post-New: UK, 0655 8246. Palor: London, 729 2405. Hagner Indums: West Genwary, 7121 3061; UK, 0890 20938.

# GALLERIES Curators take their pick

William Packer visits the Tate in London and the Nottingham Castle Museum

ogy or common place book is a perennial cination, and so it is with the visual arts. Judy Egerton retires this summer from a distinguished curatorial career with the Historic British collection at the Tate, and for her parting shot she has filled Gallery 11 with a choice of British drawings and watercoiours (no closing date yet given). She has drawn not only on the Historic but also on the Modern British collection, gen-erally understood to be the work of the first half of this century, which may be stretched a bit. Her choice thus spans the

two hundred years or so from the 18th century to the imme-diate past, from Alexander Coz-ens, Paul Sandby, Thomas Jones and Rowlandson to John Piper, Sutherland and Ardizzone; and at any point there are lovely and intriguing works to relish. Whether it is a works to reash. Whether it is a costume study by Wilkie, a house at Ironbridge by Bawden, White Horse Hill by Ravilious, or Rowlandson's lovers up to no good in the bushes, we hardly need a theme or programme to justify close atten-

tion and enjoyment.
Some of the works are known well enough, such as Counan's magnificent Norwich Market, and most, like the Turner of Yarmouth Harbour, Gwen John's seated girl and the Coxes, de Wints, Nashes and Spencers, are entirely characteristic. But by their very nature, none of them is regularly exhibited and most must be comparatively unfamiliar, which of itself makes the show special. But yet, though there is no close critical thread to follow, there is even so a general, unifying sympathy in the work; for, by this quiet celebration of some of her favourite works, it has been Miss Egerton's aim to

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The personal anthol- dition in British draughtsman- and Aris Centre, Durham, who

ship. Were it not so obvious once it is pointed out, this would be surprising, and there are still such particular surprises as Alexander Cozens' abstract landscapes, blotted onto the paper with an inky cloth as an aid to pictorial invention. The hang is not chronological but makes its point rather by subject, sympathetic cross reference and comparison. A tiny David Cox study of jars on a shelf sits happily between two I found the works

chose me as much as vice versa. The exhibition has no beginning and

end . . . it is up to Gwen John cats. Ardizzone's

view from his window, of gar-dens with people walking among the trees, hangs above that gleefully ribald Rowland-son. Thomas Jones might be a modern realist by the unforced clarity of his studies in the 1780s of the back streets and roof tops of Naplea. How Whis-tlerian is the Thames at night by George Price Boyce, except that it was made in the early 1860s. And nothing could be more modern in its radical, graphic simplicity than Cotman's Durham Cathedral, seen

(until October 9). This, too, is a ner favourite works, it has ner favourite works, it has personal anthology by a curator, Nerys Johnson of the Durbonstrate a continuing traOffenbach's Périchole

Offenbach's Périchole is musical resources of singing inexplicably less known in this country than his Helen. Orpheus or Parisian flâneurs. None of our major opera com-panies has come up with a pro-duction, though the New York Met did a souped-up and reportedly garish version 30 years ago. Connoisseurs cher-ish the old records of Jenny Tourel, a mistress of Offen bach's sensuously wheedling elegance, in the street singer heroine's ditties, melting or

organised it for the South

Bank Board. She is also an art-

let, and what makes her show so particular is that she offers

us, both in the catalogue and

the show, the annotations and visual notes she made as she

was pondering her selection.

Again it is a small show but
full of the most lovely things,
and if not everything would

have been one's own first choice, the discoveries and sur-

prises are treat enough. The implicit challenge remains to test one's own experience and

integrity in the consideration of what one would have cho-

sen. As it is, my admiration for

Peploe and my love for Gwen John grow alike with everying

of theirs I see. Gilman's steamer on the Thames at Bat-tersea was a wonderful sur-prise. Anerbach remains as

strong as ever, Brathy, never so good as when he was still a

student at the Royal College, and Josef Herman, as powerful and mysterious as he is under-

rated. The odd poignancy of Joan Rardley's village street in the snow merely underlines what was lost to British art by

her premature death.

Miss Johnson offers no clarification of her "moments of being," but the clues lie in her notes and; above all, in the chosen works. For a true work

of set should so focus the mind upon itself that the experience it affords becomes all but pal-pable. "I found the works chose

me," she writes, "as much as vice versa. Physically

exhausted by the efforts of travel. I was instantly refreshed by paintings which possessed the quality I was

looking for. Also, the longer I looked, the more these works had to give. I found that drawing each work enabled me to explore the visual landary and the control of the co

gnage . . . the exhibition has

no beginning and no end . . it is up to you . . . Which is just as it should be.

piquant.
The first thing to remember at the Edinburgh Festival production at the King's Theatre of La Périchole (she loses her definite article, and much else, in German) is that Berlin's Schiller Theater is a straight theatre ensemble, not an opera company. Music buffs who throw up their hands in horror might ask themselves whether our provincial reps or Lon-don-based national teams could produce results as musi-

cal as this.

The 15-piece pit band has the sound of a scratch salon orchestra, resources Offenbach would have known and catered for. One only wishes the production had taken more liberties with the music than Peter Fischer's arrangement allows. A fresh sattrical entertainment geared to the slender

actors would be more suitable than this attempt to turn them into opera-singers.

The problem is epitomised by the one incontrovertible non-singer in the cast: Regina Lemnitz as Périchole herself. She should be allowed to do the part as a disease with occasional Rex Harrison-like recourse to sung phrases that lie easily for her. As it is, she jumbles several registers, from cautiously breathy soprano to strident shouting from the chest. The Letter Song is carefully negotiated — just. "Que les hommes sont bêtes" is vig-orously attacked but a strain to listen to; and "Quel diner je viens de faire" has the coy deliberateness of the tipsy. A lusciously ripe face and figure

sometimes hideous.
Franz Marijnen's production opens not in Lima's tavern square but in a sleazy dive out of Cabaret, full of cleavage and corsetry. Instead of Sally Bowles we get the incognito Viceroy of Peru in the dapper shape of Thomas Schendel, the state of the light bard. tall, trim, with a light bari-tome. The reactionary vicer-gal palace boasts a variety of archaic courtiers from peri-

are negated by the actress's patent anxiety as she tries

gamely for every note with vocalisation that is willing if

wigged moralists to Victorian frumps; the near-mummifled corpse of the late vicereine adds a touch of Psycho to the

proceedings. Over the tale of the wandering balladeer whisked off to be the Viceroy's favourite and her sturdy lover who refuses to become a mari complaisant the production pours a binliner-full of gags, some coarse, some corny, most high-spir-ited. Speciacular effects include a rubber-limbed lady contortionist and a mirrored wall that opens to admit an illuminated staircase for an Act 2 curtain which throws in every joke in the book and several out of it.

As the lover turned reluc-tant husband (the swinging waltz chorus consigns him to a cell for "stubborn noblemen" rather than the original's "maris récalcitrants") gang Ransmayr deploys a boy-ish light tenor well. The music sometimes plods, as in "Je t'adore, brigand," that absurdly cajoling declaration of love couched in terms of affectionate exasperation, which emerges as a rather heavy-footed landler. The total effect is that of bierfest geniality layed on with a trowel.

**Martin Hovle** 

### The films of Sergei Parajanov Ronald Holloway on the current cult director

Only one other contemporary Soviet filmmaker is as well known outside of his country as Andrei Tarkovsky was – the Armenian Sergei Parajanov, born (1924), raised, and currently living in Tbilisi, Georgia. His films have been seen at all the recent international festivals including Venice Montreal and Munich. His best known films are the two that got him into deep trouble with the Soviet film

authorities: Shadows of Our Furgotten Ancestors (1964), pro-duced at the Dovzhenko Stu-dios in Kiev, and Sayat Nova (also known as The Color of the Pomegranate (1968). Parajanov's reckless supporters have insisted that the director's stubborn defence of "pictorial" elements in both eventually led to three separate prison terms of nearly five years (plus an additional three years under a form of house arrest), but he was more than likely forcefully inactivated over a period of some 15 years due to his cantankerous ability to antagonise

people.
Shadows of Our Forgotten Ancestors is particularly well known to the international film public: it won no less than sixteen festival prizes - none of which ever reached the film-maker himself. As for Sayat Nova, the film was taken out of his hands by authorities upon completion of the shooting in 1968, was edited for eventual release two years later by friend and colleague Sergei Yutkevich, yet until now could only be seen in the West thanks to a mutilated copy illegally distributed by Amnesty

International.

For film buffs, however, the real treat in the enormously successful and well attended retrospective at Munich was the presentation of Parajanov's earlier features at the Dovzhenko Studios in Kiev, including a 13-minute fragment of an aborted project begun after Shadows of Our Forgotten Ancestors and before Sayat Nova titled Kiev Frescoes (1966). Another feature production taken out of the director's hands, this time during the

early stages of production, it deals critically with the bitter realities of the Second World War. Indeed, if there is one Parajanov film that invites the status of a legend, then it is this: conceived and shot in a distinctive avant-garde style, its treatment is exactly opposite of that exercised by directors of the contemporary formula film on the Great Patriotic War.

Parajanov's uncanny ability to "direct between the lines" of staid socialist-realism scripts presented to him during his early career scored as the



Sergei Parajanov

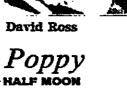
major discovery at Munich. Presented in finely restored prints, three of these features Andriesch (1954) (co-directed by Yakov Baselyan), The Best Lad (1958), Ukrainian Rhap-sody (1960) – are remarkable for the purity of the colour prints, while the fourth, The Flower on the Stone (1962), certifies that he was equally adept in black-and-white imagery as well. Each film, taken within context, seems to have paved the way for the making of Shadows of Our Forgotten Ancestors (1964), a film of folk-lore and legend based on the Mikhail Kotzubinski classic with its Romeo-and-Juliet

Say what one will about the misfortunes afflicting Parajanov throughout the seventies an assessment of his career is impossible without a study of his unique eccentric personal-ity. He loves to tell stories, particularly about his friends and personal experiences. Among the most fascinating are his prison stories, for he counts these days as "the happiest of my life." Later, released from prison, yet without a profession to fall back upon, he entered upon the time-honoured Georgian tradition of supporting himself as an self-styled "artist." Thus Munich could grace its retrospective with a Sergel Parajanov exhibition of paintings. complemented by his own two shorts on Thilist painters: Alcop Omatayan (1965) and Arabesques on the Theme of Piros-mani (1986).

Filmfest München celebrated Parajanov's visit with the world première of his Ashik Kerib (1988), the third in an apparent trilogy of episodic, image-over-word tableaux-films that began with Sayat Nova and continued two decades later with The Legend of Suram Fortress (1985). So far as Ashik Kerib is concerned, a film inspired by a poem by Ler-montov, it has been sought after with mounting enthusi-asm by the directors of Cannes and Venice, Montreal and Tel-

Having viewed all of Sergei Parajanov's ouvre, I conclude that, without Shadows of Our Forgotten Ancestors in the first place, there probably never would have been a Prayer (1967) by the Georgian director Tengiz Abuladze or an On the Eve of Ivan Kupala's Day (1968) by Parajanov's own Ukrainian cameraman-turned-director Yuri Ilyenko.

Arguably, too, an Andrei Rubleo (1966/69) by Andrei Tar-kovsky may not have been possible either without the inter-national success of Shadows. Thus, when Parajanov at the première presentation of his Ashik Kerib requested a min-Tarkovsky, it was a solemn moment of unabashed prayer that made the 1988 Munich fes-tival unforgetable for all who participated in the Werkschau Sergej Paradschanow.



Six years after an RSC premiere that left its author far from happy. Peter Nichols musical pantomime about the opium wars resurfaces revamped and revitalised at he sort of venue it is made for

- although the stark concrete expanse of Stepney's Half Moon Theatre is rendered almost unrecognisable by a set by Ellen Cairns of cardboard cut-out opulence, scarlet-swathed boxes flanking a proscenium arch overlooked on one side by a warrior queen Britannia astride the globe, and on the other by a loosely draped wanton balanced on a poppy head.

It is not hard to see how the piece would have found itself in alien territory at the Barbi-can: Chris Bond's revival is, on the evidence of its first night. undeniably scruffy around the edges but it harnesses the corny inventiveness of good old-fashioned pantomime in a way that could certainly not be written off as coy or preten-tious, allowing Nichols to lure his audience with spectacle, amuse them with an outrageous humour and finally buf-fet them with the unacceptable face of imperialism in general and international drugs traf-

ficking in particular.
Fairy godmother of the piece s Tina Marian's Queen Victoria, who announces in Thatcherite tones that she reserves the right to transform herself at will. This she does as her tale unfolds on Dick Whittington (Josie Lawrence) whose yupple go-getting and "British ingenuity" takes him into partnership with Obadiah Upward, personification of the small tradesman made good (and master of a formidable grocer's shop quartet).

Monty Norman's music ranges from jolly singalong with shades of London pub to cod-Dietrich - this last delivered by David Ross's outrageous Lady Dodo shortly after she has dismounted from a vice-regal elephant with (we later learn in one of a myriad throwaway gags) a wandering proboscis. Nichols' use - and eventual subversion - of pantomime allows us a godlike Chinese overlord, who descends godlike in a cloud; a collection of half-masked natives and a pantomime horse which lives well and truly up to its name, Randy.

But the exuberance disguises a real enough anger in what emerges as an impassioned condemnation of imperialism from the Falklands conquest backwards. The Chinese, as natives do, rebel; the Brits are blockaded in Canton; the fleet is dispatched and Hong Kong taken as reparation. In a series of really rather shocking images the laughter is cut

The company is vocally uneven and needs time to set-tle into its stride, but is unwavering in the spotlight it holds up to the good queen's indefen-sible assertion: "We answered a demand."

Claire Armitstead

New season at the Young Vic

The Young Vic opens its 18th birthday season on October 6 with the London première of Arthur Miller's adaptation of Henrik Ibsen's An Enemy of the

Directed by David Thacker. Tom Wilkinson will play Dr Thomas Stockmann.

Autumn plans also include An Investigation Into Measure

for Measure, an exploration of Shakespeare's play using five actors directed by Martin Jameson — who will also direct the company's Christmas production, David Hol-man's adaptation of Charles Dickens' A Christmas Carol.
On December 11 a Gala performance is planned to raise money for the proposed extension to the theatre building.

### SALEROOM

### Record for Scottish artist

Sotheby's had the time of its life at Gleneagles Hotel on Tuesday night selling off Scottish pictures for a record £2m, with a painting by Francis Cadell making a remarkable £214,500, easily an auction record price for any work by a Scottish artist. The previous best was the £165,000 paid for a solid Raeburn portrait at Chris-

tie's in 1982. Cadell, famous as one of the four Scottish Colourists, had trained in France and was much influenced by the post-Impressionists. "Afternoon," his 1913 composition which set the new record, shows genteel ladies taking tea, with bright flashes of lime, pink and orange jumping out from a white background. It is the best Cadell to appear on the market for years, and it beat his previous high of £44,000. It was bought by a London

dealer. The finest Scottish paintings of the early 20th century have been rising steadily in price as its genius has become better known internationally: there are now Japanese and Americans collecting Colourists, as well as many of the new British rich, English as well as Scottish. It is taking over from the Newlyn School as the latest collecting trend. Even so, Tuesday's sale surprised Sotheby's: its top estimate on "Afternoon" was £80,000. Obviously the summer break in auctions has starved the deal-

ers of quality paintings.

There were three more major artist records — £44,000 paid by a local dealer for "Adrift," depicting children aboard a makeshift raft, by the leading late 19th century Scottish landscape artist William McTagart; 241,800, way over esti-mate, for a typical Archibald Thorburn bird picture of mallard and teal in the snow; and £30,800 for "In a bluebell wood" by George Henry, one of the "Glasgow Boys," contempo-

raries of the Colourists. The other great Colourist is Samuel Peploe, and in April one of his Matisse like paintings made £127,600 at auction. On Tuesday three good works by him, two still lifes of flowers and one of fruit, sold comfortably above estimate for •£90,200 (to London dealer Whitford & Hughes); £83,600; and £68,200, (to the Scottish Gallery of Edinburgh.

Another Glasgow Boy who has attracted Japanese interest is Edward Atkinson Hornel, 'and "The wonder wood," rather formulaic portrayal of two young girls in a forest, was near the top of its estimate, selling for £46,200 to the Gerber 'Gallery of Glasgow. A feature of the auction was the consis-tency of the buying; only 6 per cent was unsold, making it an excellent omen for the new saleroom season starting in late September.

Antony Thorncroft

### ARTS GUIDE

#### EXHIBITIONS

Carte Museus et Monuments, sold in museums and Metro sta-tions, enables visitors to avoid queues at 60 museums and monuments, including the Louvre, Musée d'Orsay and Versailles Centre Georges Pompidou. The

Fifties, taking over Beaubourg for three months from the ground floor upwards. The pos-twar creative dynamism of the Fifties is represented by cars, comics, music, cinems, literacomics, music, cinema, litera ture, industrial creation and – on the fifth floor – by yist arts. The great figures of Matisse and Picasso open the exhibition with works in black and white: monochromes by Yves Klein and Montana close it. There are stat-Momana close R. There are star-les by Giacometti, mobiles by Calder, and lyrical abstraction by Hartung and De Kooning. While contrasting the School of Paris with the School of New York, the exhibition equally draws attention to some of their parallel developments. (42,77,12,38). Closed Tue. Knds

institut du Monde Arabe. Holy Places in Saudi Arabia. Magnifi-cent architectural models of the Raaba in Mecca and its black brocade veil with verses from the Koran embroidered in gold, and of the Prophet's great mosque in Medina, provide non-Moslems with a realistic mage of the shrines of klamic pligatur-age, to which they normally have no access. Manuscripts, works by the traveller Richard Burton nd 17th century Turkish ceramics complete the exhibition: 23 Qual Saint-Bernard (46.34.25.25)

I pm till 8 pm, closed Mon. Ends

Detail from Edward Bawden's "Houses at Ironbridge"

Hans der Kunst, 60 Pringre-gentstr. An important exhibition, centred on the city of Munich, which provides a broad view of the West German cultural scene. There are about 640 works – paintings, graphics and plas-tics – by 470 different artists, including over 100 women. Twenincluding over 100 women. Twen ty-two works by the Austrian painter and sculptor, Alfred Hrdlicka, form the highlight of the show. The exhibition is organised by three group of ertists. Ends Sept 11.

Museum of Modern Art/Museum of the 20th century: Exhibition of Oswald Oberhuber, one of Austria's finest artists. Opens September 9:-/- -The Anstrien National Library. The Arab world in Europe. A marvellous collection of letters and other literary items, Ends

October 16. Hermes Villa. Portraits by the fin-de siècle artists, Gustav Klimt and Emilie Floege, Ends Feb 19. Secession. Klimt's Beethoven Frieze is now back in its rightful-and original place in the restored and original mate in the restore Secession. The Secession was founded by a group of artists, Klimt included, at the turn of the century. At the time, it provided a haven and experimental ground for artists who were tired of the old established and conservative Kunstlerbaus or arts

Academy.
Visitors to Vienna must see the work put into the restoration. Besides the excellent lighting and colour scheme, the furniture, all Austrian designed, is a real

eye-opener on the wealth of cre-ativity which is taking place among the small crafts industries which have spring up in recent

Venice Palarzo Grassi. The Phoenicians. The fourth major exhibition at Fiat's imposing art centre on the Grand Canal attemps to give a complete picture of this extraordinary people, who dominated trade in the Mediterranean for over 1,000 years before their capital, Carthage, was finally destroyed by the Romans in 146 BC. The exhibition has been

given a highly theatrical presen-tation by the architect Gae Atlanti. Sarcophaghi project at odd angles from a pile of pink sand on the ground floor of the sand on the ground floor of the Palazzo; in an upstains room, model ships stand immobile in a rippling srtificial lake, and a huge polystyrene wave engulis a Phoenician wreck. Many of the 1,200 objects displayed (gold and silver jewellery, statues and reliefs in terracotta, ironze and ivory) are extraordinarily beautiivory) are extraordinarily beautiful and the 750 page catalogue, published by Bomplani, is excel-lent. Until Nov 6. Palazzo Ducale, Mexican Art

pre-Columbus, 140 powerful and disconcerting works lent by major Mexican museums, dating from the 2nd century BC to the Spanish conquest of 1521. Ends

Palazzo Venezia. Imago Mariae. Over 100 works, including mas-tarpieces by Gentile de Fabriano, Pinturicchio, Corneggio, Gia-quinto and Tiepolo, showing the progressive humanisation of the

Virgin Mary from the austere figure of the Middle Ages to the gentle and accessible charm of the Renaissance and Barroque portrayals. Ends Oct 4.

Martigny The Glanadda Foundation is

showing the second part of trea-sures on loan from the Sao Paulo Museum. Entitled From Manet to Picasso, it is especially rich in Renoirs, from society portaits and little girls in frothy lace and pink and hive satin, to a fleshy nude. Van Gogh, too, is well represented with his famous Ariesienne and landscapes with tormented trees. There is Cézanne's portrait of his wife, a Tahiti scene by Gauguin, early Picassos and Manet's Marie Lefebyre, rid-ing side saddle all clad in black and looking as seductive as Bon-nard's appealing nude or Degas' ballet dancers. (23978). Ends Nov

New York American Craft Museum. An ambitious exhibition traces the history of American architecture back to the turn of the century, and emphasises the work of artists like Tiffany, Lawrie and Louise Nevelson who were com-missioned to add art to the architecture. Ends Sept 4.

Washington National Gallery. More than 60 mesterworks, from the superb 16th-18th century collection of Munich's Alte Pinakothek, include paintings by Rubens, Rembrandt, Titian, El Greco and Van Dyck, Ends Sept 5. National Gallery (East Wing).

To mark the 350th anniversary of the first Swedish colony in North America, the exhibition covers four Swedish monarchi in the 16th and 17th centuries and shows Sweden as a resplen-dent and aggressive world power through objects and 100 paint-ings on loan from the Royal Treasury, the National Museum and the royal collections. Ends Sept 5.

Art Institute. Photographs by Josef Sudek. Using his native Prague as the background, this avant-garde photographer, who died in 1976, captured the lyrical quality of the Czech people and the country's beautiful landscapes. Ends Sept 5.
Art Institute. More than 50 Dutch and Flemish 17th century mastervieres from the Harmitase masterpieces from the Hermitage in Leningrad, including works by Rembrandt, Rubens, van Dyck and Frans Hals, kick off a collaborative effort by US and Soviet eums Ends Sept 18.

Tokyo National Museum. The ndour of Turkish Civilization: Ottoman Treasures from the Topkapi Palace. The former Seragiio of the Sultans in Istam-Sergino of the Silitans in Islam-bul boasts a magnificent loca-tion, overlookin, the Bosporus, and houses a superb collection of classical antiquities, manu-scripts, armour, textiles and other artefacts. This selection of 150 items focuses on the keyday of the Ottoman Empire, from the 16th to 19th centuries. Highlights include a steel belinet incrusted with priceless rubles, turquoises and amethysts, and a wooden throne inlaid with

ebony, mother of pearl and silver. Closed Mondays.
Teien Museum, Meguro. Masterworks from Europe. As a result of the strong yen, Japanese collectors, both public and private, have been on a spending supper have been on a spending spree recently. This exhibition draws together some recent acquisitions and, though aimed mainly at Japanese children, it provides an opportunity to assess current Japanese taste in Western art. This seems to be basically con-servative, with an emphasis on impressionism and Post-Impressionism. The 69 works on show range from Renoir at his most sentimental to late Picasso lithographs and a selection from Matisse's mighty Jazz series. The museum has a superb Art Deco interior and a pleasant ga

Deco interior and a pleasant gar-den. Closed August 24. Ends Sep-

National Museum of Modern

Art. The image of Man in Mod-

tember 4.

ern Japanese Art. Individualism is not generally admired in Japan, so portraiture, in the sense of the portrayal of individual psychology, is not part of the artistic tradition. However, in modern times, a number of Japanese painters have grappled with this problem with varying degrees of success. This exhibition features portraits and other works in which the human figure is predominant - all executed within the last 100 years. Closed Mondays. Ends September 9. Japan Folkcraft Museum (Nihon Mingelkan), Komaba, Crafts from India. The museum is in an old Japanese farmhouse building which accords perfectly with the unselfconscious beauty of the objects. Closed Mondays. Ends September 25.

Aug 26-Sept 1

### FINANCIAL TIMES

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Thursday September 1 1988

### Lessons of the Karin B

THE SPECTACLE of the Karin B sailing, like the Flying Dutchman, up and down the high seas with a cargo of dan-gerous chemicals should concentrate politician's minds onto one firm imperative. Shipments of toxic wastes, particularly those which can persist in the environment, should not be exported from industrial countries to the Third World. Proper disposal requires expensive plant and strict controls. Avoidance of these controls by dumping in Africa and elsewhere in the Third World, is not only morally indefensible but very short-sighted. The inglorious voyage of the Karin B shows why. It is carrying a cargo which was illegally shipped from Italy to Nigeria, where it was dumped on open ground, but removed after strong pressure from the Nigerian Government Since then it has been wandering the high seas without proper docu-mentation looking for a con-tractor to take the embarrassment off its hands. But for the

The daylight of publicity will be had not just for the Italy, but for the European Commu-nity as a whole, because most member countries have failed to carry out an EC directive on trans-frontier shipments of hazardous wastes which should have been implemented 18 months ago. This directive forbids the export of any such chemicals unless the country of origin is satisfied that the importing country agrees to accept the cargo and that the shipper has a valid contract for its proper Member countries should waste no more time in enacting laws which follow the spirit of the directive, as the UK has now pledged that it will do.

interest of the media, it might

#### Corruption danger

Then the EC should follow the lead of some US politicians, and support pressure in the United Nations to find ways of banning all exports of hazardous wastes to third world counmost undesirable dumping, but corruption by shippers and by

will limit its effectiveness.

Tighter controls on exports and episodes like the voyage of Karin B – will intensify public pressure for stricter con-trols over disposal in the EC But higher standards and higher costs will create even smugglers to exploit countries too poor to say "no." That is why the responsibility to improve standards of disposal

and to prevent unjustified exports must be interlinked.
Serious doubts remain whether standards of disposal within the EC are consistent and high enough. Ministers need to satisfy the public as well as themselves that the best practice is adhered to and that companies cannot avoid the law by, for example, using landfill sites for substances which should be incinerated. Fears expressed by environ-mental lobbyists that reporting systems for hazardous wastes are madequate should be taken seriously, for careful monitor-ing must be the foundation of

#### Net importer

In Britain, which is a net importer of wastes and has a reputation for being tardy about environmental protection, the Government needs to be particularly vigilant. The Government's sharp U-turn just before the last election over the testing of sites for burial of nuclear wastes shows the power of popular opinion on such matters. Yet the chemicals like those

on the Karin B must be dis-posed of, and this could be done safely in the UK, West Germany and other countries of the EC. Since special sites are required, some trade in wastes within Europe is inevithis must be on the basis of common rules enacted by all and strongly enforced. All member governments should implement the EC directive by the turn of the year - two years behind schedule. Meanwhile pressure should be exerted on the Italian authoriity for the Karin B's obnoxious

### Pinochet stakes Chile's future

THE SELECTION of General Augusto Pinochet as the single candidate in the forthcoming plebiscite for the presidency at least has the merit of providing Chileans with a choice. This is to vote out of office a man who has ruled the country unelected for 15 years.

Beyond Gen Pinochet's own future, the vote on October 5 will determine the political shape of the country for the next decade or more. If the General wins, he and his supporters will interpret the result as legitimising both the previ-ous years of repressive military rule and a future which at best could be called guided democracy. If he fails, he will immediately lose the mystique of authority. The initiative will pass to the political forces in the opposition, and the constitution is ill-equipped to cope with such an eventuality.

The 1980 constitution, tailor-made for Gen Pinochet to perpetuate himself in power, envisages that he will continue his current term as President through to March, 1990, even if he loses the plebiscite. If he wins, he could remain in power until 1998, by which time he will be well into his 80s. Meanwhile, the military, the ulti-mate arbiters, have built into the constitution an important power of veto over the deliberations of a prospective national assembly. Thus whatever hap-pens the situation is a recipe for uncertainty, if not instabil-

#### Self-appointed saviour

Gen Pinochet has made no secret of his desire to run as the candidate, genuinely believing in his self-appointed role as a national saviour who wrested a national saviour who wested Chile from the evils of Allende's populist Marxism and who has laid the basis for a prosperous society. By leaving the selection process until the last minute, the four-man junta (of which he is part), excluded virtually any option save that of Gen Pinochet. Not to have stood now would have been interpreted as an admission of his own inability to muster the votes.

Nevertheless Gen Pinochet is standing against the better judgment of several of his civilian and military supporters as well against the pleadings of respected bodies like the Roman Catholic Church - to say nothing of the views of Western governments. He is a confrontational and divisive candidate. He plays upon crude instincts of fear, constantly reminding Chileans of the economic and political chaos of the final Allende days. This message has waning public appeal and the opinion polls suggest he will be hard put to

#### States of emergency

Having resorted to continu-ous states of emergency throughout his rule on the grounds that the state is under threat from irresponsible politicians and communist subversion it is hard to believe he can now provide a peaceful transition from dictatorship to democracy, Indeed, while Chile is a pace-setter throughout Latin America for economic reform, and secretly admired as such, its political regime is distinctly out of step with the regional trend towards democratic and accountable govern-ment. Chile needs to work towards national reconciliation because in the end the economic progress achieved latterly under Gen Pinochet cannot be consolidated without political consensus

Unfortunately such considerations have gone by the board, at least for the time being, and the main task now is to ensure a clean election. It cannot be called fair, because the regime has laid the ground rules, from deciding on a single candidate to the extraordinary mechanism of permitting the incum-bent President to remain in office for a further 18 months after the vote. Passions are bound to run high because Chile's political future is at stake, and the lid has been clamped so tight on political

activity for so long. Here the onus must be on the Pinochet regime to behave responsibly, by giving the opposition a real chance to state its case. Gen Pinochet has always been dismissive of international pressure but if he wishes to be considered a legit-imate victor or an honourable loser, he must rein in the security forces which for far too long have sullied the reputation of what was once a nation highly respected for its demo-cratic traditions. David Owen talks to controversial commodities trader Marc Rich

# Alchemist at large

our years ago, Marc Rich & Co appeared to be virtually dead in the water. A protracted court case had crip-pled its US business and cost the company close to \$200m (£116m) in fines and other pen-alties. Commodities markets were dull and destined to become more so. Mr Marc Rich and Mr Pincus "Pinky" Green, the company's founders and leading lights, were wanted in the US on tax evasion charges. Today, Marc Rich is a highly profitable trading company

prolitable trading company with a \$15bn turnover which buys and sells more metals than any other in the world. Among commodities dealers, it is probably bigger than all but Cargill, the largest private company in the US. In addition to its mainstream activities, Mr Rich's company lends money to minerals-producing Third World countries. Among its assets are a 50,000 barrels per day oil refinery and a 250,000-tonne oil tanker.

The charges against Messrs Rich and Green are still pend-ing, however. This means that the pair must continue to avoid countries where tax eva-sion is an extraditable offence, and are forced to forgo some of life's simpler pleasures. For Mr Rich, one of the wealthiest and most powerful commodities traders ever to have lived, eating an American-style hamburger is a memorable experi-

Mr Rich - now a Spanish citizen - discussed the remarkable turnaround by his usually highly secretive organisation in a rare interview at the company's Swiss headquar-

For the nerve centre of a sophisticated multinational corporation with 37 offices and 1,200 employees, this headquar-ters is surprisingly modest. A six-storey blue glass box, surrounded by some desultory fountains, it sits next to the railway station in the well-heeled, well-scrubbed and exceedingly provincial Swiss town of Zug. Over the years, Zug has become a veritable Mecca for the metals trade due to its peerless reputation for discretion and its exceptionally

low taxes. Similarly, Mr Rich himself -a slim figure of average height with thinning dark hair and an ever-present cigar — is far from the glamorous stereotype of a master trader. Piercing eyes framed by unfashionable sideburns, plain suit offset by an unfashionably wide tie, he speaks slowly with frequent three sentences at a time. Born Marc Reich in Antwerp

in 1934, Mr Rich fled from the Nazis with his family seven years later. After an undistinguished school and university career in Kansas City and New York, he joined Philipp Brothers, another large commodities house, as a mail-room clerk in 1953. Within ten years he had established himself as one of the company's foremost trading talents.

A dispute over bonus payments and other matters prompted Messrs Rich and

Tuffin over



Green to leave the company and set up on their own account in early 1974. The new company grew with extraordinary speed. In 1980, a banner year even for Rich, profits totalled approximately \$300m. Then in 1982, US prosecutors

stepped in to spoil the party. They laid subpoenas against the group, alleging that Rich had broken federal oil-price regulations in 1980-81 and shipped the profits back to Switzerland to avoid paying US taxes. The following year, Mr Rich, Mr Green and Marc Rich International (soon to be renamed Clarendon and sold to a third founding partner of Marc Rich & Co Trading, Mr Alexander Hackel) were indicted on charges of racketeering, fraud, tax evasion and illegally trading with Iran. The alleged unpaid taxes, which amounted to \$48m, were described by Mr Rudolph Giuli-ani, US District Attorney at the time, as "the largest tax evasion scheme ever prosecuted."
After two years, the US government agreed to drop the

racketeering and Iran-linked charges and convert the fraud charges to a less serious offence. In return, the Swiss parent company and Clarendon pleaded guilty to 38 counts of making false statements to federal authorities, and Clarendon to two counts of tax evasion. The deal enabled the company to resume operating in the US ically excluded dropping charges against Messrs Rich and Green themselves.

Less than four years after the court case which paralysed its American operations, the company claims that its US business is now bigger in all areas than it has ever been." Earlier this year, the Swiss parent bought back from Mr Hackel a 49 per cent interest in Clarendon, although this is unlikely to presage a return to full ownership of the US affili-

In a nutshell, Rich has gath-

ered momentum where other traders have lost it by having both the confidence and the financial muscle to continue raising the volume of materials handled while competitors were cutting back. Unlike most competitors, the company was prepared to accept razor-thin margins for the sake of future

market share.
A handful of buoyant commodifies and strong earnings in property, stocks and bonds notched up by the group's fastgrowing finance division helped Rich remain narrowly in profit throughout the mid-

The group's profitability was also helped by its preparedness to trade "wherever it is legal to trade." According to Amster-dam-based Shipping Research Bureau, at least 32 shipments of Marc Rich-owned crude oil were identified in the process of delivery to South Africa over the eight years to 1987. Rich usually attempts to

"broaden its market prese by dealing in each stage of the production chain from raw material to processed commodity. In energy, the group trades anything from crude oil to petroleum products. In metals, it trades ores and concentrates, as well as the base and light metals into which they are Rather than sell the raw

materials in its possession to

refineries and smelters, Rich often prefers to negotiate long-term processing contracts which enable him effectively to rent a portion of a plant's refining capacity and to retain control of the finished product. By stipulating that both the prices he pays for raw materials and the processing fee fluctuate in line with the relevant terminal market, the company can guarantee its margin by hedging its projected refined commodity holdings with futures and options. This enables Rich to establish ahead of time the minimum price which it will be paid for its commodities.

the bread-and-butter of the group's trading activity, Rich is certainly not averse to speculation. The company makes and loses millions from price fluctuations such as those which hit aluminium earlier

this year. Speculation is one area, however, where the group's inner sanctum - comprising Mesers sanctum - comprising Messrs
Rich, Green, Hackel and Mr
Feitz Posen, head of the London operation - retain a tight
grip. The quartet vets all decisions to expose the group to
market risk. "The rule is that
when commodities are hedgeahle, they are automatically hedged," says Mr Rich. "The profitability of our company is based on physical business not speculation."

With a view to securing the long-term raw materials con-tracts on which its trading strategy depends, Rich is pre-pared to provide financing to various minerals-producing countries. Ecuador, Brazil and the Philippines have all struck deals of this type with Rich in recent years. So has Jamaica — an important source of baryita and alumina, crucial bauxite and alumina, crucial raw materials in the manufacture of aluminium.

Since 1980, the company has lent Jamaica varying amounts on an ongoing basis for several purposes. For example, it has pre-loaned money due at a later date from the US government in payment for bauxite and alumina; it continuously pre-finances deals by lending money against future product delivery; and it lent the island money to acquire the 15,000 bpd local oil refinery from

The group is split into three commodities divisions - crude oil and petroleum products, metals and minerals and grain - together with a finance and investment unit which has doubled in size in the past three years.

The importance of energy has declined along with the oil price. But it remains the company's largest division with an estimated annual turnover of \$7bn. We trade between 800,000 and im barrels per day of crude oil," says Mr Rich.

Over the past 18 months, the metals and minerals unit, with annual turnover of between \$5hn and \$6hn, has become the company's main engine of growth. In recent times, according to Mr Rich, the division "has surpassed oil in terms of profit."

Investment activities range and bond trading to commo ty-related and property acquisi-tions. Rich's best-known and most surprising purchase was that of a half-share in the film company Twentieth Century-Fox in 1981. "We considered it

a good real estate business," Mr Rich explains. With all four senior partners now in their 50s, Mr Rich says that provisions are being made for "younger people" to take their place. He scotches any suggestion that he might retire, however. "I like my work too much," he says.

#### **BOOK REVIEW**

### Establishment anti-heroes

ARTIN SORRELL, chairman of WPP, says that when he first heard of Saatchi & Saatchi in 1975, he "thought it was a

new Japanese hi-fi firm."
Nobody is likely to make that
mistake today.
As Ivan Fallon recounts.
Charles and Maurice Saatchi,
have together transformed the advertising industry on both sides of the Atlantic Starting, with £25,000 in 1970, the brothers have built a multinational business with a turnover, after 17 years of uninter-rupted growth, of nearly £4bn md pretax profits last year of £124m.

Over the past 10 years,

Saatchi & Saatchi's client base has grown to more than 10,000 companies, including half the world's top 500 corporations. its earnings per share have increased by an average of more than 36 per cent a year. In Britain, the Saatchi & Saatchi agency not only ranks. but wins more creative awards than any other. This year, so far, it has also gained £87m worth of new business, three times that of its nearest com-

Yet for all these achievements, Saatchi's shares on the London Stock Exchange lan-guish on a lowly rating.

It is difficult to avoid the conclusion that the City of London's attitude to the brothers has as much to do with image as with substance. There is a lingering feeling in the square mile that advertising is a brash, even vulgar, trade - a view which compounds the City's irritation on finding itself set up – or out-smarted? – by Saatchi's recent £177m rights issue. Add to that a marked distaste for the brothers' overweening ambition in contemplating takeovers of Midland Bank and Hill Samuel, and you begin to. understand why City gather-ings of the Saatchi fan club are not overcrowded these days. Fallon's sympathetic view of the Seatchis provides a different perspective. The deputy editor of the Sunday Times given the brothers' reluctant co-operation, fleshes out their

reclusive image. He explores their back-ground as Iraqi-Jewish immigrants; chronicles the early days as a creative advertising "hot shop"; recalls the innova-tive advertisements that helped enlarge their reputation; and gossips spiritedly about their relationship with Mrs Thatcher's Conservative Party, from the brilliant successes of the 1979 general election to the bitter backbiting of

But it is their relentless quest to be bigger, and bigger again, that Fallon finds com-pelling, and which he seeks to

1987.

Charles was the initial creative and fiery driving force; Maurice, the charming but clinical and disciplined businessman, who has come into his own as the company has expanded. But the two are so close, so bound together in

THE BROTHERS: The Rise and Rise of Saatchi & Saatchi By Ivan Fallon Hutchinson, £12.95

each other's enthusiasms that they operate as one.

Step by step, they have defined the objective, worked out how to achieve it, and then out how to achieve it, and then done it. Fallon finds the process "chilly." "They wanted a public company and they got one they wanted to be number one in Britain, and they got there. They wanted a major American advertising company, and they got that. Then they set out to become the world's number one, and they got there, too." got there, too."

The Saatchis always believed that being hig was important, an instinct supported by their experience in the early days, when they could not get the big accounts because their agency was too small.

Fallon tends to support the view that their often ruthless preoccupation with size and power was only later given the gloss of philosophical justifica-tion by embracing, for instance, the "globalisation of markets" theories of Professor Ted Levitt, et al.

It is probably nearer the truth, too, to say that the Saatchis have made a management virtue of their own low boredom thresholds and thirst for new challenges.

That said, it has to be con-ceded that the brothers, throughout, have shown a remarkable flair for picking the right people to take on both creative and management

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tasks on their behalf. The qualities that the atchis have demonstrated in achieving their present pre-em-inence in the industry, as Fallon suggests, have to be set against the scepticism about the brothers' philosophising and their future strategy for building a "services supermar-

As recently as March this year, Maurice Sastchi was rei-terating his belief that, in the future, the big global compa-nies would want all their ser-vices around the world from the same company - not just advertising but banking and management help as well.

The Seatchis' plans for mov-ing into financial services may have to be deferred until their rating in the City improves. But the drive into mans consultancy continues.

With ambitions focused, resources committed, and given their record, it would, says Fallon, be a brave man who bet against the Saatchi brothers scaling greater

Philip Rawstorne

## **OBSERVER**

the top ■ Whatever else they do, strikes provide abundant pub-licity for their leaders. When postal workers last took national strike action 17 years ago, it was the beaming features and luxuriant moustaches of Tom Jackson that stood out. Now it is the smooth oval face and monk's haircut of Alan Tuffin, his successor.

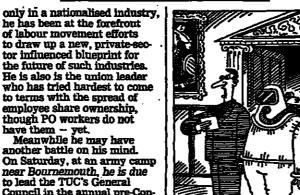
Despite yesterday's 24-hour strike and the prospect of more to come, Tuffin is probably the best current example of that traditional union figure, the reluctant militant. While local-level industrial action has been considerable in the PO's letters division this year, his reputation is that of ana-tural and cautious moderate, trying to reach a negotiated solution to industrial relations problems.
Some PO managers believe

that in doing so Tuffin and the leadership of the Union of Communication Workers thus get the best of both worlds: negotiated settlements at national level, driven along by the draining, disruptive effect of unofficial local-level

Brinkmanship is a traditional union weapon, and Tuf-fin and the UCW know how before Christmas when an indefinite national strike was threatened and the union won concessions. One of the surprises of yesterday's action was that it happened at all; someone went over the brink.

Relations between the UCW and the PO are sometimes seen by outsiders as too cosy: like those between the farmers' union and the old Min of Ag. Unlike many union leaders nowadays, Tuffin still cuts a commanding figure in the head office of the principal employer with which he deals.

Tuffin himself is a genial 54-year-old south Londoner who started work for the Post Office at the age of 16 as a tele-gram boy. Despite operating



have them — yet. Meanwhile he may have another battle on his mind. On Saturday, at an army camp near Bournemouth, he is due to lead the TUC's General Council in the annual pre-Congress cricket match against labour and industrial correspondents. Past form suggests that he should be on the win-ning side; Post Office business however, could keep him away.

Brave front

■ Soldier Magazine, the fortnightly publication by the Min-istry of Defence for the army, is currently carrying an adver-tisement for T-shirts and sweatshirts emblazoned: "There's something about a Soldier." That is undoubtedly true, but it seems an odd time for the MoD to be asking offduty men to proclaim it in public.

Opera fashion

Paris's new opera house at to open next year, but there have been so many rows over both its architecture and its purpose that no one has been very sure what it will end up doing. At least it now has a head.

Pierre Bergé, chairman of the fashion group Yves Saint Laurent, was named yesterday by the government as chairman of a new body running not only the Bastille Opéra, but also its senior sister, the Opéra de Paris in its Garnier



"It's the Italian Amb to see you, Ms Bottomley."

building, and the Opéra Comi-

que. Bergé entered the fashion business with Yves Saint Laurent 30 years ago and has retained the reputation of an aesthete. He is credited with launching the painter Bernard Buffet. His heart is also in the right place for the current socialist government: he is one of the principal benefactors of the amti-racist movement.

Buzzer's serve

■ After 20 years of open tennia the game is facing a crisis of success. There are so many tournaments and sponsors chasing too few calendar weeks and star players that no one is satisfied. That explains why Marshall Happer the executive director of the Association of Tennis Profes-sionals, is threatening that the ATP will run its own tour in 1990 unless the men players' union is given a controlling voice on the Men's Tennis

Council The players are united in

their stand against what they regard as the excessive influ-ence of the International Tennis Federation where they claim that they are always out voted by the tournament directors. In fact, the lobbying that goes on between the players and the directors behind the scenes usually means no such thing.

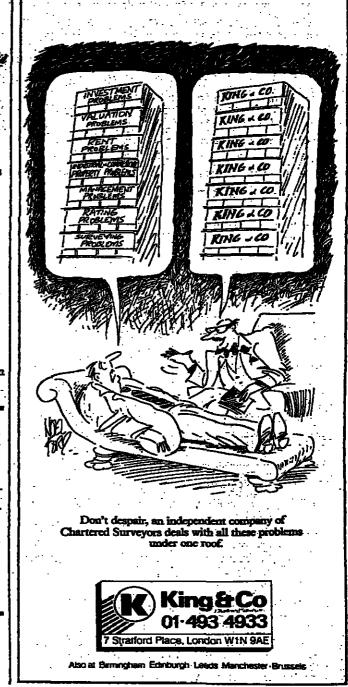
The real points are power and money. The players want the four Grand Slam championships to pool their TV rights so that the whole men's tour can be better marketed. ITF and Grand Slam repres tives believe it is essential to retain control of these revenues which fund the games in Australia, France, Britain and the US and contribute to tennis in the third world.

A climax may come today when the four Grand Slam chairmen, including Buzzer Hadingham of Wimbledon, hold a press conference. They have already said that they will take a strong line, so a split seems inevitable in 15 months' time. There could then be two rival circuits

Real power

If In marks to London Elec-tricity. I called them at 8.35 on Tuesday morning about a non-daugerous fault at home. An electrician was round by 9.15 and the work done by 9.30. I was about to pay a similar compliment to Battleh Tele. compliment to British Tele-com, which has been unfailingly prompt in repairing the telephone when occasionally out of order. But yesterday I ordered an alarm call and it did not come.

Breaking up Sign in a derelict garden: "Crazy paving is not all it's cracked up to be."



appeared
UK official statistics show a

been raised (and in Germany

increases in consumer taxes promised) even though unem-

loyment remains stuck on a

high plateau. In these circum-stances a synthesis and inter-

pretation of recent research on

unemployment, given as an inaugural lecture by Professor

Christopher Pissarides at the London School of Economics,

repays attention (Centre for

Labour Economics, LSE Dis-

cussion Paper 304, March 1988). Looking at British unem-

ployment over several decades,

Neither changes in produc-

tivity, nor in aggregate demand, affect unemployment in the long term. Those who believe that rapidly increasing

labour productivity destroys jobs (that is those who

embrace the lump of labour fal-lacy), and those who regard high productivity as a spur to

job creation, are equally

wrong. Over the years, changes in labour productivity are reflected in output not jobs.

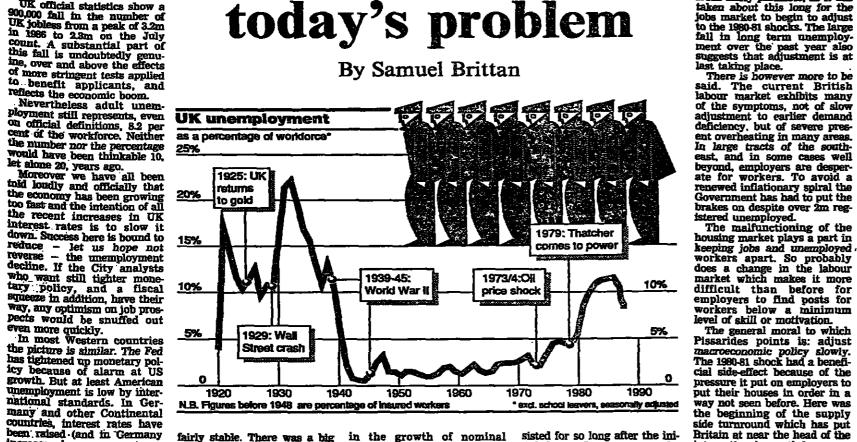
• The big changes in unemployment take place in short

sarides makes two general-

t often pays to examinuntashionable o ECONOMIC VIEWPOINT neglected problems. Now that the focus of most attention is on inflation, overattention is on inflation, over-heating and the balance of pay-ments, it is a good time to re-examine unemployment, a problem that has far from dis-

# Unemployment still today's problem

By Samuel Brittan



fairly stable. There was a big fall in unemployment in the late 1930s and the early war period. The level then remained low and stable until the late 1960s, after which there was a rapid, but modest, rise. There was another not so modest jump around 1974 and a really big rise in 1980-81. In the intervening periods unem-ployment was surprisingly sta-ble. Since 1986 there has been a rapid fall (too late to be taken fully into account in the lecture) which will not go on too much longer at its recent rate.

Concentrating on experience since 1979 under the Thatcher Government, Pissarides poses three main questions. What were the economic shocks behind the phases of change? What were the forces that transmitted these shocks to unemployment rather than to other variables? Finally, what caused the new levels of unemployment to persist for so long once the shocks were over?

His explanation of the post-1979 shocks is familiar. There was a demand shock (strictly speaking a surprise alowdown

in the growth of nominal demand). Pissarides attributes this to tight internal fiscal and monetary policies. I would be more inclined to attribute it to the sharp rise in both the nominal and the real exchange rate for sterling, which was the true thunderbolt for British industry. This difference of view does not however affect the main argument.

The second shock was the oil

price explosion, Opec II. Its result was to squeeze profits in manufacturing. Both the demand and exchange rate shock and the oil price shock required a drastic check to both nominal and real wages if employment was to be preserved. But because of the nature of labour markets "a fall in aggregate demand is eventually reflected in money wages and prices, but not instantaneously." The severity of the 1980-81 shocks led to a sharp rise in unemployment before there was any chance for these wage and price stments to take place.

The more difficult problem is why high unemployment per-

sisted for so long after the initial shocks. One reason may be and employers are less inclined to hire them.

this may be a factor additional to the general boom in the recent unemployment fall.

for persistently high unemploy-ment is the nature of the wage employers and workers who already have jobs. Outsiders who might prefer to work even at lower wages are excluded.
Although Pissarides does not

that the long term unemployed become "discouraged workers." They withdraw from job search

changes, not in social security benefits, but in public attitudes towards them. For a large part of the period with which the author was concerned, drawing benefits was becoming more socially acceptable and there was also a less critical attitude on the part of officials paying out, if only because of pres-sures on their time. The pendu-lum has since swung back and

bargain. This is between

another outsiders are eventu-

A further reason lies in

repeat performance on the British economy. The 1980-81 shock was neither planned nor intended – least of all by the Prime Minister or any of her colleagues or advisers, all of whom were committed to grad-ualism. A similar shock a second time round would put the jobs improvement into reverse, without necessarily bringing the offsetting supply side improvements we saw in 1980-81. The Chancellor was right to take some risks in the spring to prevent sterling from going through the roof again. But even if the overall Brit-

ish economy manages to make Another reason suggested a soft landing, problems lie ahead on the jobs front. For rising demand will become less and less a source of jobs in the period ahead; and the focus of employment policy must move to specifically labour market measures. The interests of the unemployed outsiders need to spell it out, his theory must assume that by one route or be taken more fully into account in wage decisions than they have been for decades.

Kuwait and BP

### Britain's free market credibility at risk

By Ian Seymour

uch will be at stake tomorrow, when the Monopolies and Mergers Commission delivers its report to Lord Young on the public interest implications of the acquisition by the Kuwait Investment Office of a 21.68 percent shareholding in British Petroleum.

ally reabsorbed. For he does not believe that adverse demand shocks affect job pros-

demand shocks affect job pros-pects permanently: only that it takes seven to eight years for their effects on output and jobs to wear off and for prices and wages to adjust instead. The seven or eight year lag now looks fairly plausible, as it has taken about this long for the tobs maybet to begin to adjust

jobs market to begin to adjust to the 1980-81 shocks. The large fall in long term unemployment over the past year also suggests that adjustment is at

There is however more to be said. The current British lahour market exhibits many

of the symptoms, not of slow adjustment to earlier demand deficiency, but of severe pres-

housing market plays a part in

level of skill or motivation.

The general moral to which

international growth league, None of this means that it

would be desirable to inflict a

last taking place.

Petroleum.

If the commission's verdict and Lord Young's follow-up action go against Kuwait, it will represent a kick in the teeth for a huge and friendly investor in the UK, and raise a question mark over the Gov-ernment's commitment to its

own free market principles.

Consider the facts: the Britconsider the facts the infi-ish Government insisted on going ahead with the planned sale of its remaining 31.5 per cent stake in BP in October 1987 despite the collapse of the share price in the wake of the stock market crash. This inevitably made BP highly vulnera-ble, but the Chancellor's gam-ble was that drifting shares would somehow settle them-selves over the markets without undue concentration. The gamble failed. Kuwait scooped the pool – but it could easily

have been someone else. Thus far, the whole matter would seem to be a case of a shrewd investor obtaining a big holding in a first-rate company on advantageous terms. Nothing wrong in that. In addi-tion, the Kuwaiti action saved the British Government a large sum of money that it might otherwise have had to pay out to investors claiming the guaranteed floor price of 70p per share. But here the plot takes a more sinister turn. In its understandable embarrassment at having acquired such a powerful shareholder in a situation not of its own making, BP appears to have told the Government something to the effect: "You got us into this

mess, now get us out of it". The case against the KIO on public interests grounds is flimsy. Nevertheless to allay fears, however misplaced, of Kuwaiti interference in BP decision-making, the State of Kuwait recently covenanted itself unllaterally, with legally binding undertakings, not to use its shareholding for ulte-rior commercial or political motives other than for the pro-tection of its investment, and not to seek board representaits voting rights to 14.9 per cent, not to go above its current interest and not to exceed 20 per cent in the future should it decide to dispose of any of its present share.

The arguments being marshalled against the KiO can be divided into three categories: historical, commercial/opera-

nistorical, commercial/opera-tional and strategic.

As regards the first, BP is portrayed as a British national flagship in the oil industry which should not be tainted by foreign influence. This holds no water at all for many water. no water at all. For many years BP has been working hard to distance itself from national identification with the UK and has been remarkably successful in assuming a multina-tional character. Nor does the present Government have any time for the idea of a national oil company anyhow, having dismantled the state-owned British National Oil Corporation in 1985 and sold off all of

its one-time majority share-bolding in BP itself.

In history, perhaps, may be found the cause of some linger-ing bad blood between BP and Kuwait stemming from the 1975 nationalisation of the former's half share in Kuwait's oil production. But this should be seen as part of an inevitable process of decolonisation.

On the operational plane, the arguments against Kuwait stem mainly from fears that behind the benign mask of the KIO lurks the powerful, state-owned, Kuwait Petroleum Corporation (KPC). But such mis-givings should now have been conclusively laid to rest by the binding undertakings of non-interference which bear out the KiO's contention that, like all its other UK stock exchange investments, the BP shares are held for portfolio purposes.

It has sometimes been con-tended that BP's worldwide operations may be harmed cause foreign governments or companies may be reluctant to do business with a company that has the Kuwait Govern-ment as a substantial share-holder. This is surely a canard. Such evidence as there is suggests that the Kuwait share-holding would not have any effect as far as RP's dealings in Europe or the US are concerned, and might prove an advantage in areas like the Arab world and the Far East.
West Germany's Hoechst — in
which Kuwait, through KPC,
has a 24 per cent shareholding
— has had no problems doing
business on that account.

On the strategic level, it has heen suggested that Kuwait — as a member of Opec — might use its influence in BP to cut hack the company's oil production and exploration in the UK and elsewhere. This seems wildly improbable. For one thing, Kuwait would never resort to such insanity – as an international company KPC is fully aware of the importance of playing by the rules wherever it operates. For another, the British Government aiready has full powers to pre-vent manipulation of North Sea production levels. More-over, BP's oil production operations in the North Sea, Alaska and elsewhere are gov-erned by consortia agreements with other partners, not by

Nor would there be any plau-sible threat to the UK public interest in the event of a change of government in Kuwait away from its pro-Western stance. In such cases
- as was demonstrated in Iran with the Shah's overseas investments - it is the foreign investor that is the hostage to fortune, not the recipient of

The Kuwait Government has at risk an investment which will be worth £3.8bn when the shares are fully paid. But the British Government stands to lose something even more valuable: its credibility as the custodian of a free market where foreign investors can be confident of receiving fair treatment within the rules laid down. That credibility will be badly shaken if the Government is seen to be bending the rules to punish an investor whose only offence has been to take astute advantage of the Government's own offer.

Whatever happens, the poli-ticising of the issue is unlikely to benefit BP. If there is one thing worse than a major shareholder, it is an angry major shareholder.

The author is editor of the seekly journal Middle East conomic Survey.

### LETTERS

### Controlling inflation remains the central priority

From Mr Ian Taylor MP. Sir, The July trade figures were admittedly appalling, but reports that many Tory MPs have suddenly lost faith in the Government's economic manement are, surely, far from reality.

It is unlikely that many of us will urge the Chancellor to reach for the old levers of credit and other controls, having previously expended so much effort in getting rid of them; nor agree with the National Institute's call for higher personal taxation, as this would negate the longer term effects of the Budget's tax cuts which can only be benefi-

The key to continued confidence is that the UK economy is experiencing a remarkable period of intrinsic success. This was underlined by the

From Mr W. Grey.
Talk of a new, interest rate/
liquidity-weighted measure of

the money supply (August 16) has followed on the heels of a hint in the Bank of England's latest Quarterly Bulletin.

This shows a greater official emphasis on the effective

Watching and weighting

recent OECD (Organisation for Economic Co-operation and Development) Annual Review, which on several key indicators was even more optimistic

tivity in recent years, combined with strong industrial investment, should permit a faster annual rate of economic growth than the recent trend of 3 per cent plus would imply. Even analysis of the latest export figures shows positive signs that this investment process is bearing fruit increased sales abroad, and the breakdown of the import fig-

tle to control inflation remains the Government's central prithan the UK Treasury.

The dramatic rise in producority. Even though the rate of deterioration of the trade balance was not predicted, the policy of concentrating on increasing the cost of money should be given time to work

ures shows that the re-equip-ping of British industry is con-

The Chancellor's task now is to bring down the rapid growth of domestic demand to a rate more consistent with the long

the Bank's sterling trade-

weighted index, rather than the nominal rate against any

one currency, however impor-

thing to watch.

W. Grey, 12 Arden Road,

Clearly, weighting is the

through the system (rather than making over-hasty judg-ments that it will be insufficient). Already, for example, there are signs in the south east of England of a tightening in the housing market, and promises of loans by the building societies in July were less than the record in June.

The strain of higher interest rates may begin to hit industry
- though less than on individuals. It should be noted that the rate of return on industry's

run growth in productivity.

The move to base rates of 12 cent, the highest for 25 years, per cent indicates that the batrestored. Essentially, it is pay rises that damage industry on a percentage point-for-point basis, far more than interest

> Overseas confidence in the UK remains high, judging by capital inflows, and the favourable impact of reducing the national debt is not to be underestimated. There would appear to be positive co-opera-tion between central banks on interest and exchange rates, and this will be a critical factor in coming months.

Now is certainly not the time to urge the British Govern-ment to undermine its supply side policies by reintroducing a panoply of domestic controls. Ian Taylor, House of Commons. SW1

### The time has come

From Mr F.S. Law Sir, One wonders whether preparations made by the opean Community's member governments for 1992 include a decision to adjust the summer/winter time changes

to an EC standard. The advantages gained by having the same working

hours throughout the EC must surely overwhelmingly outweigh any possible dis

This has been debated in Brussels, but no final solution has so far been found. We must hope that by 1992 it will be. F.S. Law. 43 Lennox Gardens, SW1

#### 'Railways are the usual textbook examples'

Dr Jorg Schinmelpfennig.
Sir, When discussing the case for subsidising British Rail, two arguments should not be allowed to become mixed The first is the call for subsi-

dising the mere existence of British Rail – or some parts of it, as inter-city services -because of a natural monopoly; that is, decreasing average Railways are the usual textbook examples where, in an extreme case, there is not a

single point on the demand curve where total costs may be covered. In such a case a subsidy can be justified as long as it is exceeded by the social welfare generated by the railway system as a whole (which can easily be approximated, once the demand curves are known.) the demand curves are known). The second argument concerns the point of marginal efficiency. It is well known, of

course, that the "price equals marginal cost" rule represents the so-called "first best" solu-tion, resulting in marginal efficiency. But, unfortunately, this result only holds if the rule is obeyed in other markets as

Once there is a deviation Once there is a deviation from it in any competing market, we must abandon the "price equals marginal cost" rule in favour of a so-called "second best" solution. As long as private marginal costs of motoring are below social marginal costs — which is cerginal costs - which is cerainly the case not only in the United Kingdom but also in the rest of Europe as well — this requires a second kind of "sub-sidisation": namely that British Rall commuters should pay less than marginal cost.
This would result in a down-

ward shift of demand for pri-vate motoring and, thus, in a net gain of social welfare. To be technical for a

moment: the relative prices of public and private transport would approach the respective relative social marginal costs. Of course, the urgency for a parallel strategy remains unaffected. To prevent the overall price level in the transport sector — which is already too low

- from falling still further, private marginal costs of motoring have to be moved markedly upwards. A rise in the petrol tax is certainly one way to achieve this goal.

But the reason for such a

proposal being on the political agenda (as it is now in West Germany) may be a different one. Sometimes it is not only some efficiency loss, but the budget deficit, that has to be

Jörg Schimmelpfennig, Department of Economics, Universität Osnabrück, Rolandstr. &

#### In simplicity sublime

From Mr Will Wyott Sir, Christopher Dunkley, your television critic, raised an eyebrow (August 24) at the "starkly economical" look of the series Late Great Britons, and wondered whether the BBC was to blame. I asked Brook Productions to provide an intelligent and stim-

provide an intelligent and stim-ulating history series in the tradition of the AJP. Taylor television lectures of years past. Thus the blame – or con-gratulations – for the simplic-ity of style should be the BBC's. Congratulations for the

Brook Productions. Will Wyatt ries Group, BBC Television, Kensington House

choice of subjects and histori-ans, and for the thought-pro-voking approach, should go to



# How to "K'eep Ahead in Shipping.

Keep counting on "K" Line, the company that developed containerization in Japan and still holds the lead. Our 200 ultramodern ships — with a 10 million-ton capacity — ply 30 global routes linked by a highly efficient system.

Our computerized documentation system that minimizes paperwork and speeds up the issuance of necessary documents. And our on-line container inventory system that pinpoints your cargo's location at all times - and collects product-related marketing/distribution data worldwide to help us pioneer new containerization methods and new routes.

"K" Line works independently or in tie-ups with consortiums to give you more space and frequency. We also combine different modes of transportation to get your cargo door to door. We handle any kind of cargo all the way with one B/L to cover eveything.

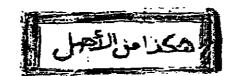
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### **FINANCIAL TIMES**

Thursday September 1 1988



### Pinochet holds all trump cards in Chile poll

THREE PEOPLE were shot dead, more than 20 injured and at least 800 arrested in incidents following the Chilean's military junta's nomination of General Augusto Pinochet as the candidate in a one-man presidential plebiscite on Octo-ber 5.

The "No" Command, an umbrella group of 16 political parties campaigning for a "no" vote in the plebiscite, called on Chileans to beat saucepans at 8pm in symbolic protest, but to remain in their homes and avoid confrontations with the regime's supporters. Nevertheless, disturbances

erupted in several poor and working-class neighbourhoods, recalling anti-government protests of previous years. Several people were shot by men in civilian dress firing their weap-

ons from moving cars.
The offices of the "No" Command were attacked on Tues-day night by demonstrators who shattered windows and hurled objects through the bro-ken glass. The building is located on Santiago's main avenue, one block from the seat of government where the General's candidacy was announced in a formal ceremony. A spokesman for the command said the group had an agreement with Chile's national police force, the Carabineros, to guard the offices but that the building was unprotected when the pro-gov-ernment demonstrators

Chile's electoral service

**US** imposes

tax on Thai

dumping

bearings

in Bangkok

rapid economic

Department announced prelim-

inary findings accusing the

Thai Government of subsidis-ing the bearings, used in com-

puter equipment, by 17.83 per cent. Most of this is in the form of tax concessions to investors

in export industries. A ruling

is expected in November. Minebea, which last year

exported from Thailand \$14.5m

of bearings to the US is also under anti-dumping investiga-

tion by the European Commu-

nity. A ruling from Brussels is

expected by the end of the

the American corporation Sea-

gate produces computer disc drives in Thailand mainly for

export to the US, with tax

incentives similar to those

nomic growth has been led largely by manufactured exports and investment has

been flooding in from Japan, Taiwan and other countries in

response to the investment incentives as well as the com-

petitive economy.

Special incentives such as

tax relief on imported machin-

ery and duty rebates on imported raw materials are offered to companies that man-

Thailand's recent rapid eco-

granted to Minebea.

ufacture for export.

Thai observers noted that

By Peter Ungphakorn

closed its voter registration offices at midnight on Tuesday, in accordance with the official proclamation of the plebiscite. The electoral service's most recent figures showed that 7.4m people had registered to vote by the end of July, not

counting the thousands of CMIinscription offices during August in a last-minute attempt to register in time. According to electoral service workers, the level of registration, in a country of 12m

inhabitants, indicates that a higher percentage of eligible voters will cast ballots in the debiscite than in any previous Chilean election.

Chilean election.

Following the nominating ceremony, Gen Pinochet addressed supporters from the balcony of the La Moneda presidential palace. Although a pro-government tabloid estimated the crowd at 60,000, the number of supporters filling. number of supporters filling the plaza and surrounding streets appeared to number no more than 5,000 or 6,000. Chile's state-run television network avoided broad camera shots of the crowd, sticking

largely to close-ups and shots of Gen Pinochet.

If the turn-out for the pro-government rally was less than Chilean officials had hoped, the Pinochet campaign still has a number of advantages over its opponents. Although the country's tightly controlled television stations are to begin giving opposition groups some limited air time, the news and public affairs programmes are unlikely to alter their largely

progovernment content.
Gen Pinochet enjoys the backing of the Chilean army, which sees itself in the vanguard of a movement begun in 1973, the year of the coup, to protect the country from an ever-present Marxist threat. Older Chileans with negative memories of socialist President Salvador Allende's ill-fated government, along with much of the business community, also tend to support Gen Pin-

ochet, although they may have preferred a conservative civil-ian as the regime's candidate. The extent of Gen Pinochet's

support among other branches of the military is unclear, and both the commanders of the air force and national police have said publicly that a "no" vic-tory in the plebiscite will not result in chaos.

A 15-year-old military regime's continuous references to the Allende government are

unlikely to impress younger voters, and the "No" Command had already assumed that Gen Pinochet's nomination was a foregone conclusion. Its leaders have seized on the length of Gen Pinochet's presidency and his statements years ago that he would not be a candidate. One particularly clever advertisement printed in independent newspapers and magazines shows a wooden figure with an extended Pinochio-like

nose surrounded by micro-phones and the caption: "And he said he wouldn't be the candidate." A recent poll by three opposition research institutes showed that two-thirds of the respondents believed that Gen Pinochet had been in power too long, suggesting that the 72-year-old general's nomination does not help the Government's chances in the plebi-

The "No" Command is planning a rally on Sunday in Sant-lago, and the comparative size of the crowd it attracts may provide a clue to support for a "no" vote.

### Japanese banks plan Frankfurt subsidiaries

By Haig Simonian in Frankfurt

SIX MORE Japanese banks plan to set up investment banking subsidiaries in Frank-furt by early next year, undaunted by last October's stock market crash and the present torpor in both the West German stock and bond mar-

Sumitomo Bank starts business today while Fuji Bank is due to open on October 1. Mitsuhishi Bank is expected to join them before the end of the

Sumitomo Trust and Dai-Ichi Kangyo Bank intend to set up subsidiaries early next year and Mitsubishi Trust is due to be represented through a joint venture with Germany's Westdeutsche Landesbank. These three Japanese institutions are still awaiting approval from the German authorities and opening dates have not yet been set.

Bank of Tokyo and Indus-trial Bank of Japan have exist-ing investment banking subsidlaries in Frankfurt, where all four leading securities houses are also represented.

Japanese banks' enthusiasm to move to Frankfurt, where both suitable personnel and office space remain in short supply despite the crash, stems from a variety of factors.

The Japanese finally gained permission to lead manage D-Mark Eurobonds last October, although there has only been a handful of issues so far because of poor market condi-

Yet while securities sales and trading are the first priori-ties, all the newcomers also hope to become more active in corporate finance in the longer

operations in Frankfurt are not expected to affect the banks' existing branches or representative offices in Düsseldorf.

### UK faces demand for statement on IRA deaths

Continued from Page 1

A Thai Commerce Ministry official objected to what she described as inconsistency in US law, which allowed large amounts of money to be paid directly as subsidies for American ing him to state whether or not the SAS was involved. Mr Marshall said it was important to establish if the deaths were unavoidable and were consist-ent with the use of minimum directly as subsidies for Ameriforce by security forces.

Mr Paddy Ashdown, leader of the smaller opposition Social and Liberal Democrat party can rice, most of it exported, while penalising other countries for reducing taxes on

**WORLD WEATHER** 

said it was important for the Government to "give specific assurances that the standard rules of engagement applying to security forces in Northern Ireland were not breached." . The IRA yesterday named the men killed on Tuesday as brothers Martin and Gerard

brothers Martin and Gerard Harte and their brother-in-law

Brian Mullen. It said they had all been on "active service." One of them had been ques-tioned by detectives investiga-ting the IRA coach bomb blast near Ballygawley on August 20 in which eight British soldiers died

The RUC, Northern Ireland's police force, regarded all three

as highly active terrorists who had carried out numerous attacks on security forces in

recent years.
The Royal Ulster Constabulary refused to elaborate on their statements that they had been killed when "soldiers encountered armed men in a vehicle and opened fire."

### Union Texas loses tax appeal

Continued from Page 1

linguistic nature. The UK-US double tax agreement com-bines the drafting techniques of the two delegations which produced it and does not lend itself easily to the strictly logical, grammatical interpretation usually applied to the UK's finance acts.

The Union Texas claim, presented by Mr C.R. Bretten, QC, relied on the literal, strictly logical interpretation of the agreement. Because the term "tax credit" was given more than one meaning in the agreement - and the taxpayer could

be assessed for tax only on the basis of the plain meaning of the statute — Mr Bretten argued that the term "tax credit" could not be taken as meaning tax credit within section 86 of the 1972 Finance Act and that, consequently, no authorisation for deduction from the dividends to the US company could be found either in the agreement or in the

Finance Acts.

The judge rejected this method of literal interpretation as Union Texas was not a UK taxpayer or a British subject.

"The life of the law was not logic, but experience," he said. The amount at stake would have been far larger had com-panies been allowed to reopen assessments for years where agreement had already been reached with the Revenue.

Section 33 of the Taxes Management Act provides for cases to be reopened where an error or mistake has occurred. However, this does not apply where a tax return was made on the basis of practice generally prevailing at the time.

pany. Shareholders have long ago taken the measure of Mr Maxwell's aspirations, which involve trebling the company's sales by 1990; but for all the

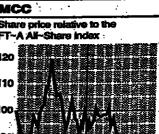
help they got from yesterday's statement, their profit expecta-tions must be hazy indeed. Not surprisingly, investors were assured that treasury operations would play a smaller role in future, after yesterday's £22m drop in profits from that source. And if MCC was faulted before for the uncertainty of these earnings, then their disappearance must surely enhance the quality of what remains. But MCC will need more than quality to make up the £40m or so shortfall on investment income for the full year, and it is far from-clear that the core businesses can yield that much extra.

No doubt a prospective yield of around 10 per cent does its bit to help investors cope with uncertainty on the earnings front. But the past speaks for itself in relative terms, the share price has done precisely nothing since five years ago; and given yesterday's 30 per cent decline in half year earn-ings per share, the end of the year could see earnings as much as 4p shy of their 1984 level. Buying all or some of Macmillan would obviously do a lot for Mr Maxwell's sales

a lot for Mr Maxwell's sales targets, but the impact on shareholder value is less clear. Investors can scarcely complain, however, if purchasing Macmillan — or even AGB, which is being acquired by another Maxwell company — is complian. Mr Maxwell Company — is empire-building. Mr Maxwell has not kept banging on about his £3bn to £5bn sales target for nothing, and if shareholders have only now discovered that size might come at the expense of earnings growth, they have only them blame.

reacher

The willingness of Wereldhave to increase what was already a generous offer for Peachey in a falling stock market suggests that they see things differently on the Continent. Wereldhave's shareholders seem perfectly content to pay asset value for a company in a sector so overheated that



May 1987 Jan 1988 Aug

its value had risen 7 per cent in just two months, and unconcerned by the 100 per cent gearing that the bid will imply. Meanwhile Peachey's share-holders could scarcely believe their luck yesterday, to judge by the haste with which they sold. The deal managed to suit both sides at once, as each val-ues property shares differently. Dutch investors apparently like Wereldhave's international portfolio well enough to grant its shares a premium of 10 to 15 per cent over asset value. compared to which a tiny discount to a kitchen sink valua-

tion of Peachey may look good The whole thing displays an almost touching faith in the future of the London property market. But given the number of West End properties which recently have been bought by foreigners at record prices, it would seem that Wereldhave is not alone in thinking that London still represents the best value going.

Pearl Group

Mr Larry Adler's stalking of Pearl is evidently proceeding on tiptoe. Since June, it now appears, he has increased his stake by almost a percentage point to 8.1 per cent, and Pearl has underperformed the market by 10 per cent in the period. The market seems per-suaded that the process will be a long one, with loose stock gradually assimilated until the stake is large enough to be passed on to a (presumably

European) bidder. Then again, the market may simply be asking itself what happens if no bidder appears. mium to the market seems to leave a lot of downside. Much

Pearl's management. As yester-day's interim figures con-firmed, the company's life busi-ness is growing strongly, and there is every incentive to continue the process by upping the payments to policy holders. This would lead to an automatic increase in dividends, a process which might in any case be justified in the light of

case be justified in the ngnt of the unusually low distribution of life profits in the past. That apart, yesterday's results were within expecta-tions – better homes and prop-erty business, largely due to weather, and some recovery in the motor account. But as Mr Adler acutely spotted last year, Pearl's chief attraction is not

for BSR's stillborn merger is simple bad luck—interest rates have risen and the mystery bidder found its sums no longer added up. However, BSR's shareholders have little charity left after so many years of disappointment, and will doubtless blame the company directly for this latest schack. Whatever the cause, BSR is now left with an even worse credibility problem than' before. After having in effect declared itself for sale, it now appears to be backtracking, and the announcement of management changes seems a belated effort to win a little shareholder confidence. Yesterday's 19 per cent fall in the share price shows support is not to be bought so easily. The price is back to where it was before the talks began, and although prospects for this year have deteriorated since then, any further fall in the shares might tempt BSR to

start buying them itself. The company now finds itself in the odd position of being a textbook bid stock without the share price to match. Its core power supply business is successful enough, and is in a market with strong growth prospects. Presumably it would make sense for any big component manufacturer to enquire further; though the equipment manufacturers themselves, such as IBM or Apple, migut be deterred by the prospect of supplying the Pearl's historic yield is now 3.6 competition. Still, it is not surper cent, which for a stock prising that the shares are 40. with a traditional yield pre- per cent below what must be a minimum bid price; in market conditions like these it would depends, though, on the effect be folly to pin too much on a of Mr Adler's presence on purely hypothetical bidder.

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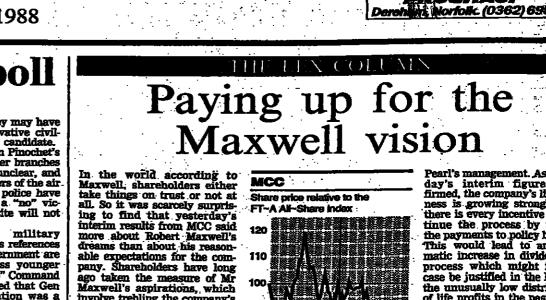
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Section 15

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as a trading entity, but as an unrecognised store of value. The charitable explanation

THE US has imposed a temporary anti-dumping duty of almost 18 per cent on antifriction bearings made by the Japanese company Minebea, in back for Thailand's export-ori-entated investment promotion policy which has been an important contributor to its A senior official of the Thai Board of Investment complained yesterday that the US was being unreasonable and protectionist. In order to develop, Thailand had to com-pete with exporters such as Malaysia and China, which have similar policies.

Responding to a complaint from an American manufac-turer, the US Commerce

Cables from a giant floating crane lifting the wrecked Chinese jetliner which skidded into Hong Kong's harbour early yesterday from Kai Tak International Airport's single runway. The Hong Kong Government launched an investiga-tion into the crash in which six crew members and a Hong Kong passenger were killed and 15 others injured among the 89 people on board. The Trident aircraft, which belongs to Civil Aviation Administration of China (CAAC), China's

flag-carrier, skidded in heavy rain as it was

landing on a flight from Canton. Later yester-day, a Delta Air Lines jetliner carrying more than 100 people crashed and burned on takeoff at Dallas-Fort Worth Airport in the US state of Texas, killing at least 13 people and injuring about 40. Many of the survivors climbed to safety through a blackened hole in the top of the aircraft's cabin. Witnesses said the Boeing 727 went down in hazy sunshine, broke into two and burst into flames on a flat, grassy field near

### Italy gives up hope of landing waste

Continued from Page 1

ment had been that Britain wanted more substances included on the list of hazard-

B cargo that are not included under the directive," he said. Initially, the Italians had ech some reasons for hoping that the ship would be allowed to dock once British authorities were informed of the composition of the waste on board. On Tuesday, Mrs Virginia Bot-

ous wastes.
"If what we have read in the press about the contents of these barrels is true there are some substances on the Karin

toxic, as Rome claims. tomley, Britain's Junior Envi-ronment Minister, had appeared to stress that permission was being refused

because the composition of the cargo was unknown. It was not clear last night whether a door which had seemed aiar was slammed shut during diplomatic contacts yesterday, or whether Italy had found it impossible to convince the British that the Karin B's cargo was not highly

Some kind of technical analysis was made for the Italian Government before the cargo was loaded in Nigeria and the Civil Protection Ministry says that it is largely paint resi-dues, phenolic resins and slime from industrial tanks all of a low toxicity. The Italian Greens, how-

environmental pressure group, which revealed traces of polychlorinated biphenols. These must be incinerated at high tion of poisonous dioxins.

try was saying nothing last night about the Karin B's next possible port of call. Over the working through Italian embassies, has gathered sev-eral bids for disposal of the waste and it claims it has other proposals to fall back

ever, are harassing the Gov-ernment with the results of an analysis carried out in Nigeria for Friends of the Earth, the temperatures to avoid produc-

The Civil Protection Minispast few weeks the Ministry.



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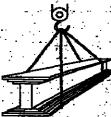
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#### **Inland Steel shows** mettie of success



Chicago's Inland Steel is riding high on a boom in the US steel market. With record earnings in sight for this year, the company is looking to improve the quality of its products to maintain ernings growth even in another steel downturn Inland's improvement

drastic cost-cutting programme launched in 1980. Deborah Hargreaves looks at inland's strategies for survival and success. Page 18

Hard times for some in Tokyo Hoping for huge profits, foreign banks lobbied hard for the deregulation of the Japanese . financial markets. But the subsequent intense competition has slashed both their market share and profitability. Stefan Waystyl looks at the options now available to the hard-pressed overseas financial institutions operating in Tokyo. Page 20

**United Nations liberates African** 



millet, then go to work in the fields. But today, thanks to a unique project funded by the United Nations' Development Fund for Women, she and many other women have been liberated from hours of-drudgery

What the women do with the time they save has algnificant implications for African agriculture. Page 32

#### Market debut for Ferruzzi unit:

The reorganisation of the Italian Ferruzzi-Mon-tedleon empire passes a milestone today with the stock market debut of Ferruzzi Finanziaria (Ferfin), the holding company previously controlled by the Ferruzzi family. The new listing on the Milan and Bologna bourses comes from the fusion of Ferruzzi Finanziaria and Iniziativa META, property, retailing and financial services company formerly controlled by Montediana.

Akısulase back in the black

Alusuisse, Swies light metals and chemicals or one which ran up from which ran up losses totalling SFr1.3bn (\$220m) in 1985 and 1986, hopes to resume dividend payments this year after an absence of three years. Hans Jucker, chief executive, attributed the improvement to the excellent economic situation, the corresponding demand for high products and the sponding demand for bulk products and the sharp rise in the aluminium price." Page 19

BSR merger talks dropped

BSR International, Hong Kong-based electronics group, has called off merger discussions with an unnamed third party. The company said it was confident it could expand its electronics activities independently. The news caused BSR's shares to fall sharply in London trading. Page 21

#### Market Statistics

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Chief price changes yesterday PRAMERICALITY (2010)

Prince

Karstadt 412 + 8

Norderi 4505 + 7

Ruthel 348.5 + 4.5

Descher Bt. 264.5 + 2.3

Bayr Vargins 325.5 + 2.5

Public 198. - 1.7 TOSTYO (Yes) MEW YORK (5) | The 

Land Suc. 544 + 812 Maxwell Comms. 199 + 3 Peachey Prop. 644 + 32 Pearson 709 + 12 Steel Bonts 219 + 11 

# VW sales soar as demand rises in foreign markets

**VOLKSWAGEN**, West German car manufacturer, expects its world-wide sales to reach a record of nearly 2.9m vehicles this year after a 2 per cent rise to 1.48m in the first six months of

The improvement has come entirely in foreign markets, with strong performances in Italy, Spain, and France. in 1987, sales by Volkswagen and its Audi and Seat (Spain) subsidiaries totalled 2.77m vehicles.

This year, Volkswagen has added a sleek new version of the large Passat to its range of cars. While its main family model, the Golf, has met new competition from Flat's Tipo, analysts note the Italian car still has to prove itself against Volkswagen and competing hatchbacks from other

Manufacturers.

As announced in July, Volkswagen's group net profits in the first half were 2 per cent higher at DM310m (\$166m) on turnover which was up by 5 per cent to DM90 the

At the pre-tax level, the increase was a steeper 10 per cent to DM791m.
Cash-flow showed a 14 per cent increase to DM2.4bn. Capital spending, influenced last year by preparations for the new Passat,

was 24 per cent lower at DM1.7bn. The group, which is 50 years old this year, has already indicated it hopes to continue last year's slightly improved perfor-

This followed a year in which earnings were hit by a costly for-eign exchange scandal.

Volkswagen has also embarked on a cost-cutting programme, including cuts in the workforce, to improve profitability.

It said yesterday that, barring unforeseen problems, it expected profits for the whole of 1988 to

profits for the whole of 1988 to follow the trend of 1987.

Group net profit totalled DM598m last year.

Unit sales in the German market were 8 per cent lower at 459,000 vehicles in the first six months, which contrasts strongly with a 7 per cent advance abroad to 1.02m

Volkswagen said that the German market, which weakened in April and May after a boom in recent years, had recovered in

Deliveries had also been affected by the changeover to the

### Nippon Mining lured by Gould marriage prospects

Ian Rodger and Anatole Kaletsky look at the growing attraction of foreign bids for Japanese industry

Japanese

his week's agreed \$1.1hm bid for Gould, US electronics group, from Nippon Mining might have been specially arranged to show the contrast between American and Japanese attempts to shift old-line indus-trial companies from a depen-

dence on out-moded products to a technologically-led growth.

The deal bears some of the characteristics of the trend in characteristics of the trend in recent years for Japanese companies in mature sectors to develop new businesses in high technology areas: the old shipbuilders, such as Mitsubishi Heavy Industries, are all piling into aerospace while speel-makers, such as Nippia Steel, have been dabbling in electronics and new materials.

It would resh to suggest, however, that both Nippon's existing businesses, in all and non-ferrous metals, have little or no future, especially for a company with leading positions in each. Similar diversifications have

been attempted over the years by numerous American industria groups, but with mixed results. ould may never have been one of America's most successful companies but five years ago it seemed a respectable example of just the kind of transformation Nippon Mining is now undertak-

ing.
The takeover is also one of the more dramatic examples of another important trend in Japa-nese industrial strategy. Thanks to the high yen and high share prices in Tokyo, Japanese compa-nies can now afford to buy their way into foreign businesses and technologies which they could not have dreamed of acquiring three years ago.

"It is an indication of how termination of how terminations are also as a second control of the c

ribly cheap US assets are for Japanese companies," says Mr Steve Richardson, general manager of stockbroker W.I. Carr in Tokyo. He and others have no doubts that the trend for Japanese com-panies to acquire US businesses will accelerate in the next few

However, the Nippon Mining However, the Nippon Mining move is on a much larger scale than the high-tech diversifications seen previously, reflecting the clout given by the high yen: Nippon Mining's consolidated net profits of Y7.5hn in the year to March come out at \$55.4m when expressed in dollars, more than double, those of Gould, even double those of Gould, even though the US company has twice as many employees as the

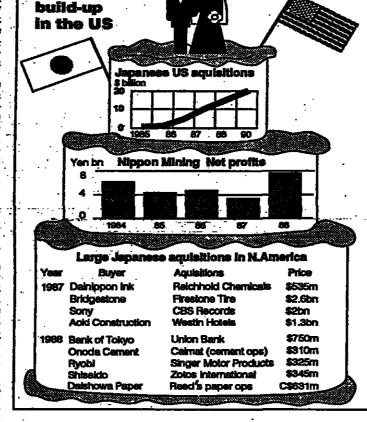
Japanese group.
Additionally, high Japanese share values mean Nippon Min-ing, which has a price earnings ratio of more than 50 and a mar-ket capitalisation of something like \$3.5bn, can raise \$1.1bn with

Mr Hideo Ishihara, managing director of Industrial Bank of director of Industrial Bank of Japan (IBJ), Nippon Mining's main financial adviser, said yesterday Japanese companies were finally becoming "more open minded" about acquisitions. Until recently, they preferred to do only greenfield or joint ventures when expanding managements.

when expanding overseas.

The trend will also help Japanese banks expand in the highly-competitive mergers and acquisitions business. In this case IBJ Schröder Bank & Trust, IBJ's New York subsidiary, has han-died the US advisory role for Nip-

That may be putting if a bit sales and almost all of its \$79m sale



cal oil and non-ferrous metals businesses. Also, its results have been depressed in recent years by the high cost of closing down several mining and smelting

It has maintained its position in other non-ferrous metals, being the Japan market leader in copper and a large supplier of zinc, gold and silver. It has also entered high technology metal fabrication for electronic and opto-electronic applications.

owever, its base is now in oil, which accounts for 63 per cent of total sales. It has three oil refineries in Japan with a combined capacity of nearly 300,000 barrels a day, and a dominant 47 per cent stake in Kyodo Oil, the country's thirdlargest oil products retailer. Kyo-do's results are consolidated in

the group's accounts. Certainly, the last few years have been difficult in oil, but Nippon Mining directors believe good times will return at some point, and that they are well placed to benefit from them. The planned takeover of Gould

is hardly a lunge into the unknown for Nippon Mining. The two companies have had several agreements since a joint venture to make copper foil for printed circuit boards was established in

Japan in 1981.
Nippon Mining began importing and marketing Gould fibre optic components in 1985. In April of this year, the two set up a joint venture to make copper foil in Hong Kong and in July they established another to sell Gould's super-minicomputers in

Japan.
It is almost exactly five years ago that Gould's share price peaked at \$44, roughly double

ones the US advisory role for Nippon Mining is to pay for the company.

Gould began life as a manufacturer of automotive batteries in the 1910s and automotive compostant a new one, and the recent profit record of both Nippon Mining is to pay for the company. start's new one, and the recent profit record of both Nippon Mining and Gould raises the issue of whether they will do any better of Gould's managerial fortunes as together than they have done well as its share price - 75 per cent of the company's \$1.76m

a series of seemingly unconnected businesses, including property development, defence electronics and semiconductors, had begun to unravel.
Mr Charles Ylvisaker, its mer-

curial chairman, had masterminded more than 60 acquisitions and 70 divestitures since he took sized battery maker in 1967. But with the go-go days of the great conglomerates long forgotten, the

stockmarket was unforgiving of what turned out to be several badly mistimed acquisitions. First Mr Ylvisaker's ventures in property, based around a polo ground in Florida, went wrong, and Wall Street decided that Gould's interests in property development may have had more to do with its chairman's love of horses than with any commercial logic. Then came a slump in the semiconductor business, soon after Gould's acquisition of American Microsystems. Finally, there was disastrously mispriced naval radio project won by the company's new defence electron-ics division.

But possibly Mr Ylvisaker's worst mistake lay not so much in his acquisitions as in his impa-tience with dull old-line businesses, including car batteries. Having disposed of these, he had no steady cash generators to tide Gould over the many cyclical and technological risks it now faced.

To his credit, however, the company managed to sustain its research and development and build on its technological leads in several key industries – includ-ing semiconductor materials. Its expertise in these areas is what attracted Nippon Mining and enabled Gould to bow out with a modicum of self-respect.

Gould's troubles culminated in

September 1986 when Mr Ylviisaker was replaced by the current chairman, Mr James McDonald, a soft-spoken engineer recruited from IBM. Since Mr McDonald took over, Gould has been steadily disposing of its many losing businesses and tak-ing a series of big write-offs. The large defence electronics business has not yet found a buyer, but will be operated after the merger in a special "blind" unit, managed entirely by Americans, rather than Japanese.

### Racal may not float telecoms

By Hugo Dixon in London

RACAL, the British electronics group, may be forced to postpone the flotation of its telecommuni-cations subsidiary because of the decline in London stock market decline in London stock market prices, one of the company's financial advisors said yesterday. The offer, which could value the company at £1.75bn (\$2.95bn) or more, has been scheduled as one of the higgest London new issues this autumn.

A postponement would be an embarrassment to Sir Ernest Harrison, Racal's chairman, who only two weeks ago won a bitter fight with Millicom, a leading US shareholder which was opposing

his flotation plans.

A delay in floating Racal Telecom, whose flagship is Vodafone, the mobile phone operator, would also prevent Racal from raising the funds it has said it needs to invest in its other busi-

It might even lead to a resumption of bid rumours over Racal. The company is widely believed to have decided on the flotation plan in order to boost its share price and so deter predators, notably Cable & Wireless, the international telecommunica-tions group, which then held 2.8 per cent of its equity.

Racal wants to float off 20 per cent of Racal Telecom rather than the 25 per cent normally demanded by the London Stock Exchange. The Stock Exchange is therefore insisting that at least 2350m in equity is floated, giving Racal Telecom a mini-mum value of £1.75bn.

One of Racal's financial advi-sors said the issue would have to be pulled if it was taking place in today's markets. He was hopeful that conditions would improve by the end of October, when the flotation is due to take place, but said there was concern that this date was close to the anniversary of last year's stock market crash.

One of Racal's leading institu-tional shareholders said: "They (Racal) have got problems. It would be foolbardy for them to-go ahead just because they feel committed to." He said he would not now underwrite a flotation valuing Racal Telecom at £1.75bn, although he would have Racal's shares closed at 304n

yesterday compared with a yearly high of 351p soon after the flotation plan was announced. The present price

values the group at £1.9bm.

Mr Stephen Owen, an analyst at James Capel, said this meant the stock market was putting a notional value on Racal Telecom of only £1.1bn-£1.2bn, when the value of the other husinesses was

### Dutch claim bid victory for UK property group

THE BID battle for Peachey Property Corporation, the UK property company which owns London's Carnaby Street, came to a swift conclusion yesterday after Wereldhave, the Dutch predator, raised its offer and Cazenove, its stockbrokers, swept into the market for Peachey

By the close of business, Wer-eldhave, the second largest propentance, the second largest property company in the Netherlands, claimed control of 50.75 per cent of Peachey's fully-diluted equity.

Ahead of the bid, Wereldhave owned a 10.4 per cent stake in Peachey, to which it had already added another 1.27 per cent as

added another 1.37 per cent as the weaker market pushed Peachey's shares below the ini-tial offer price. Yesterday's buy-ing spree netted a further 38.74 per cent, and Wereldhave also had acceptances in respect of 0.71 per cent of Peachey's shares at the first closing date. Assuming valid cover is received, this adds up to 51.24 per cent of the ordinary shares, or 50.75 per cent on a fully-diluted basis.

Wereldhave's revised offer is worth 650p a share in cash, compared with 612p previously, and values Peachey at £282m. It also contains a full loan note alternative, compared with the earlier the Dutch said yesterday.

partial arrangement, and a revised cash offer for each Peachey preference share of 75p. Wereldhave says the additional consideration will be financed by further borrowings. Shares in Peachey, which started the year at under 370p, jumped 32p to 644p

yesterday.
The new offer, however, is still pitched at a near-4 per cent dis-count to Peachey's latest estimated asset valuation. This was conducted on August 24 and suggested net assets of 676p per

share.
The defeat was greeted with a deafening silence from the Peachey camp. The company itself refused to talk, although Warburgs, its advisers, conceded that the Dutch company appeared to have control. The company was still considering its recommendation to shareholders last night, having earlier noted the higher offer and advised shareholders to take no action.

Wereldhave itself rebutted sug-

gestions that it had overpaid for Peachey by bidding towards the top of the UK property cycle. "If you compare the UK market with prospects on the Continent, there is still a lot more potential here,'

### Advance for two Maxwell ambitions

By Clay Harris and Raymond Snoddy in London

THE acquisitive international it. ambitions of Mr Robert Maxwell, the British publisher, advanced on two fronts yesterday. Mr Max-well expressed confidence about the \$2.37bn bid by Maxwell Com-munication Corporation bis munication Corporation, his printing and publishing group, for Macmillan after a meeting in London with Mr Edward Evans, chairman of the US publisher.

Meanwhile, Pergamon Professional and Financial Services, one of his stock market vehicles, won AGB Research's recommendation for a takeover bid valuing Britain's largest market research group at £134m.

The likelihood is growing that MCC will at least get Macmillan's information services division – for which it has already put for-ward an alternative \$1.1bn offer - if not the mainstream book

publishing business.
Mr Maxwell said: "Our current intention is to acquire the whole of Macmillan, but if the manage-ment prefers to sell only the information side and we can agree a price and it is within the rules, we are prepared to look at per cent jump in operating profits for the six months to June 30. Lex, Page 16; Results, Page 21

Further talks are to be held in New York next week. In London, meanwhile, Pergamon, called Hollis until it sold its engineering businesses in May, said the acquisition of AGB would enable it to expand its interests from the existing range of legal and employment services, educational supplies, and

Yesterday's bid thwarted a pre viously agreed deal under which MAI, the British money-broking and advertising group, was to have raised its stake from 9.6 per cent to nearly 30 per cent by injecting its own US market research operation, MRI, into

software for school administra-

Pergamon, which bought nearly 15 per cent of AGB shares in the market last week, is offer-ing convertible loan stock valued at 236.8p per share, with a cash alternative of 220p. MCC yesterday announced a 33

This announcement appears as a matter of record only.



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Solicitors WILDE SAPTE

AUGUST, 1988

Riggs A P Bank Limited

#### INTERNATIONAL COMPANIES AND FINANCE

### Carnival Cruise poised to take over Royal Admiral

CARNIVAL CRUISE Lines of US regulatory approval, but Cruises. Miami, the world's third big-gest cruise company, looked virtually certain last night to take over Royal Admiral Cruises, the sector's second

biggest operator.

Mr Micky Arison, president, said Carnival had agreed to buy just under 70 per cent of Royal Admiral, mainly from Gotaas-Larsen and I.M. Skaugen, the Norwegian shipping

companies.
The deal would give Carnival control of more than 23 per cent of the key North American market, and propel the company to the top of the cruise line league, ahead of P&O, the UK group which recently acquired Sitmar

Cruises.

The agreement is subject to

Honeywell

four units

By Our Financial Staff

to sell

HONEYWELL, the US electronic controls and defence equipment group, is putting up for sale four divisions of its space and aviation systems

The units, which employ about 3,500 workers, are Electro-Optics, based in Lexington, Massachusetts, Training and Control Systems, of West Cov-ina, California, Defence Com-munications and Production, of Tampa, Florida, and Signal Analysis Centre, of Anapolis, Maryland.

The divisions have combined sales of about \$430m, or 6 per cent of the company's total sales of \$6.7bn. Honeywell said combined sales for its space and aviation systems business totalled \$1.9bn.

The decision to sell reflected a resolve to continue focusing on core businesses - commercial aviation, military avionics

and space markets.
Last month, Honeywell reported that net income in the second quarter had fallen by 41 per cent because of problems with defence contracts and a semiconductor product line in its solid-state electronics divithis is expected to be a formal-ity in view of the fragmenta-tion of the cruise market. However, it could also be prevented by Anders Wilhelmsen, the third major share-holder in Royal Admiral, which has an option allowing it to match Carnival's offer.

Wilhelmsen's position was unclear last night, although the company was thought unlikely to try to raise the \$550m necessary to block the sale. Mr Anders Wilhelmsen, president, refused to comment. The three Norwegian ship-ping companies each have a 30.72 shareholding in Royal Admiral, which incorporates the formerly independent com-panies, Royal Caribbean Cruise Lines (RCCL) and Admiral

Two small shareholders Johnson Line and EFFOA-Fin land Steamship, have agreed to sell their minority shareholdings, which total 7.84 per cent. Mr Cato Holmsen, managing director of LM. Skaugen, said his company and minority shareholders Johnson Line and Finland Steamship Company had agreed to sell "regret-

fully."
Mr Holmsen said I.M. Skaugen had feared a legal dispute if it refused to sell in the wake of a "very strong" prior agreement between Gotaas-Larsen and Carnival.

Carnival said it intended to operate RCCL and Admiral separately from its own fleet. The combined group would have 15 ships.

### **Industrial division** helps boost Litton

By James Buchan in New York

LITTON INDUSTRIES, the West Coast defence and electronics group, yesterday reported a 23 per cent increase in earnings for its fourth quarter to July, due to a strong performance in its industrial

while revenues advanced 6.5 per cent to \$1.31bn. For the year as a whole, Litton enjoyed a 21 per cent increase in net income to \$167m or \$6.33 a share on the strength of a 10 per cent rise in sales to

The chief advance came in Litton's industrial division, where it is the leading provide of seismic services to the oil and gas industry and runs a large factory automation busi-

In this division, profits rose The Beverly Hills contractor to \$30.8m from \$17.68m in the said its earnings in the quarter were \$43.7m or \$1.66 a share, annual earnings more than doubled to \$127.3m. In advanced electronics, Lit-

ton's largest and most profitable division, earnings were almost unchanged at \$52.9m in the quarter and \$186.2m for the year because of start-up costs

### Canadian bank ahead

By Robert Gibbens in Montreal

BANK OF NOVA SCOTIA, Canada's fourth-largest char-tered bank, has reported earnngs of C\$368m (ÚS\$299m) or C\$2.02 a share for the first nine months of fiscal 1988, up from C\$359.7m or C\$2.09 on an operating basis a year earlier.
There were fewer shares out-

which, including special prohi-

bitions against Third World loans, showed a final net loss

Third-quarter earnings this year were C\$112.3m or 58 cents a share, against an operating net of C\$118.7m or 69 cents in the 1987 period. The quarterly dividend rate is to be raise from 19 cents to 20 cents with the October 27 payment.

### Nomura in talks to buy US futures firm

By Roderick Oram

NOMURA SECURITIES is negotiating to buy a majority stake in GNP Commodities, a Chicago futures and options firm, as part of the rapidly accelerating investment by Japanese institutions in the city's market makers. So far this year, Daiwa, Nikko and Yamsichi have

Nikko and Yamaichi have become clearing members of either the Chicago Board of Trade or the Chicago Mercan-tile Exchange. While they appear set to build up operations from scratch, the Long Term Credit Bank of Japan recently took over Greenwich Capital Markets, a Connecticut based firm active

on the Board of Trade.

The developments reflect a growing desire by Japanese investors to hedge in futures and options markets their exposures in stocks, bonds and foreign exchange. Nomura began talking two res in stocks, bonds and

months ago about taking a stake in the medium-sized firm, which is active on both Chicago exchanges. Mr Brian Monieson, GNP's chief execu-tive, said a definitive agreement had yet to be reached, but negotiations were continu-

"Our philosophy is that the industry will begin to be dominated by firms with mega capital," Mr Monieson said. GNP, for example, wanted more capital to expand its trading strategies so it could handle more funds from institutions.

It also wanted to invest heavily in computerisation so it could better use information affecting investors. The firm's current capital level of about \$25m, including

the value of seats on the two

exchanges, was already some-thing of a constraint on its ability to take on new investors, Mr Monieson added.
The firm, which clears for about 250 other members, handles some 1.5m transactions a dies some 1.5m transactions a month. By buying into an established firm, Nomura would have advantages over Japanese companies building up their Chicago operations from scratch. In particular, through GNP it would get better pit positions than would a new entrant.

### Inland Steel builds on quality

Deborah Hargreaves on a strategic move to higher-margin products

s the US steel industry struggles out of the dol-drums of the past 10 years, Chicago's inland Steel is taking advantage of its recent cost-cutting measures and is riding high on a boom in the steel market.

With record earnings in sight for the year, the company is looking to improve the quality of its products in order to maintain earnings growth should the industry another downturn.

Inland Steel's first-half income shot up to \$143.5m this year, an 80 per cent gain over last year's \$79.9m. As with most US steelmakers, the company is working flat out and using more than 90 per cent of

its capacity.

As the value of the dollar has fallen, Inland, which is not a leading player in the export merket, has seen many of its US customers return onshore for their needs. It feels confident it will be able to retain

these customers.
Mr Frank Luerssen, chairman, says: "We're getting a double whammy. We've made a substantial improvement in costs and we're getting better prices."

However, much of Inland's improvement can be attributed to its 20 per cent reduction in costs. Steel prices, although improving, have returned only to their 1982 levels.

The company has reduced costs by investing in new, effi-cient steel-making processes,

cutting capacity by at least 30 includes 41 service centres per cent and slashing its work-nationwide, grouped into two subsidiaries, Joseph T. Ryerson and J.M. Tull Metals.

productivity improvements continue, Inland is reaging the benefits of most of its large adjustments.

The company's steel operating margin has risen to \$45 a

ton, a sharp reversal of the period several years ago when it was losing almost that amount per ton. Since the company pulled itself out of a stretch of losses in 1985, it has seen earnings on a steady upwards curve.

In 1980, when the company launched its cost-cutting programme, it decided it would be known as a steel producer and

marketer, inland moved to get out of its marginal businesses. The sale of its housing, containers, and special machinery sides is almost complete; although it is still trying to get rid of a hotel in Kalamazoo, Michigan.

At the same time, the com-

pany has boosted its chain of steel service centres - distri-bution centres that market and button centres that market and process steel — as a way of reducing its vulnerability to a cyclical downturn in steel.

Mr Luerssen says that the service centres and steel production side complement each other as the company can take cash out of the centres to offset.

cash out of the centres to offset the high fixed-capital costs of steel production. Inland's distribution chain is

now the largest in the US and

with extremely close toler-

and J.M. Tull Metals.

The service centre chain contributed more than 40 per cent
to the company's first-half
profit this year, a figure which
is likely to grow as the industry pushes more of its processtre and finishing functions on ing and finishing functions out to the centres.

On the steel-making side, Inland is concentrating on the production of the sort of higher-margin, sophisticated products in demand from the Car industry

r Lucresen sees little future for Big Steel in the commodity end of the steel market — concrete reinforcing bars and steel profiles as well as hot-rolled steel coils. These products are often simplied by foreign producers, at lower prices, and by the rising band of steel mini-mills.

"We would like to differentiate further our range and really put money into higher. really put money into higher-margin products," he says. Inland is currently working

on the construction of a steel cold rolling mill in a joint ven-ture with Japan's Nippon Steel, which when completed, will be one of the highest quality operations in the world. The mill, which is being built near South Bend, Indiana, will be capable of producing 600,000 tons of cold-rolled steel

Inland owns a 60 per cent stake in the new mill, which is due to be operating by the first quarter of 1990. The company has invested about \$400m in the operation, which, using Japanese technology, will cut down the processing time for steel coils from 12 days using conventional methods to just 30 minutes. Mr John Jacobson, steel ana-

mr John Jacobson, steel analyst at AUS Consultants, says:
"The company is extremely forward-thinking, the prospects for this new mill are very bright."

At the same time, inland has focused its bar and structural operations on producing spe-cial-quality alloy steel and engineering bars, cutting out the commodity-grade steel bars. The bar and structurals have been formed into a new division with \$100m earmarked for an update of their facilities. The boom in the US steel market partly results from a

set of import restraints on steel, which limit the amount of foreign steel for sale. It is also founded on a resurgence in manufacturing on the back of a lower dollar.

Steelmakers have cut back so much in recent years that several analysts have pointed to the need to restart idled capacity to fulfil the booming demand, inland itself had difficulties filling some orders last year when the company was experiencing teething troubles with some new equipment.

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### Cash-rich Antofagasta seeks acquisitions

By Kenneth Gooding, Mining Correspondent

ANTOFAGASTA Holdings, which is listed in London even though most of its assets are in Chile, has about \$100m of cash ready for acquisitions, according to Mr Andronico Luksic,

the chairman.

He said yesterday that the money would be invested in natural resource companies or communications businesses. Investment would probably be in the UK, France or Spain to lessen the company's reliance on Chile, where its has rail-way, mining and other industrial interests.

Antofagasta was virtually its existing interests instead of tree of debt, he pointed out.

Last year it generated a net profit of £12m (\$20m) by selling is a \$35m scheme to double

Forestal Colcura, a forestry company in the south of the Chile, within a year of buying the stake

Mr Luksic said, however, that Antofagasta — in which his family group has a 70 per cent shareholding — would prefer to leave the cash in the bank rather than pay over the odds for any acquisition. The Forestal sale had

released enough cash to make a large acquisition worthwhile. Antofagasta would borrow money to finance expansion of its existing interests instead of using its own resources.

production at the company's Michilla copper mine by installing a solvent extraction, electrowinning plant. Last year the mine produced 16,800 tonnes of refined copper. A \$2m investment program should boost this by 20 per cent to 20,000 tonnes this year,

rising to 24,000 tonnes in 1989.
By 1990, Michilla is expected to produce between 40,000 and 44,000 tonnes of copper a year at below 40 cents a lb, compared with the current 55 cents and 65 cents last year. Mr Luksic said the Interna-

tional Finance Corporation, the World Bank affiliate, had indicated it would be willing to provide \$35m towards the Michilla project in exchange for an equity stake of between 30 and 35 per cent. Antofagasta hoped to buy the outstanding 35 per cent of Michilla it did not own by year end.

A group of banks is putting up \$45m and taking 35 per cent

of Antofagasta's Los Pelambres copper project, which is expec-ted to produce 20,000 tonnes annually in the early 1990s. Punitaki, the company's small gold mine, will start producing today at the rate of about 11,000 troy ounces a year and a cost of \$180 an ounce. Mr Luksic said Antofagasta's

original railway business continued to generate a healthy



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### **NOTICE TO** MIDLAND BANK ACCESS **CARDHOLDERS**

Midland Bank plc announces that the interest charged to its sterling Access cardholders will be increased from 1.75% to 2% per month with effect from 8th September 1988. From that date the new rate will be applied to all interest bearing balances, cash advances and purchases attracting interest for the first time. This means that the ANNUAL PERCENTAGE RATE OF

FROM 23.1% TO 26.8%. Condition 5 (b) of the Conditions of Use will be amended accordingly with

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WORKSHOP

The risks involved in trading often complex instruments in the capital markets are very clear and the events of last Autumn make the problems even more immediate. In these workshops a panel of Price Waterhouse and banking industry experts examines the risks and explains how they can be managed successfully. Speakers will be drawn from a panel including:

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Finance Director	Director
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General Manager, Treasury	Assistant Menager
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### INTERNATIONAL COMPANIES AND FINANCE

### Alusuisse hopes to resume payout

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J. K

ALUSUISSE, the Swiss light metals and chemicals group, hopes to resume dividend pay-ments this year after an absence of three years.

The company, which ran up losses totalling SFr1.3bn (\$828m) in 1985 and 1986, had returned to health somer than expected, Mr Hans Jucker, the chief executive, said yesterday.

He attributed the improvement to "the excellent eco-nomic situation, the corre-sponding demand for bulk products and the sharp rise in the aluminium price." Parent company income before extraordinary items was

By John Wyles in Milan

MR RAUL GARDINI'S reorganisation of his Ferruzzi-Montedison empire passes a milestone today with the stock market debut of Ferruzzi (Ferfin), the holding company previously controlled by the Ferruzzi family.

Ferfin arrives at the Milan and Bologna stock exchanges

and Bologna stock exchanges as a result of the fusion between Ferrnzzi Finanziaria and Iniziativa META, the property, retailing and financial savices company hitherto 64 per cent-controlled by Montedison

The venture is not without some sacrifice for the four heirs of the company's founder, Mr Seraino Ferruszi

expected to more than double this year, Mr Jucker said. In 1987 Alusuisse turned in a against a SFT28m at this level against a SFT96.1m loss in 1986.
After extraordinary items, parent company net earnings last year totalled SFT74.4m against losses of SFT564.9m. profit of SFr28m at this level sees of SFr564.9m.

The company reports good business in both the alumin-ium and chemical divisions for the first half of this year. Group turnover rose by 14 per cent to SF12.88bn. Second-half sales and earn-

ings are expected to be of the same order as those for Janu-ary-June. Cash flow, which

40 per cent.
This level of shareholding

This level of shareholding has been sufficient for the Agnelli family to maintain control of Fist, but if it does not prevail at Ferfin, the family says it will raise its holding. In material terms, most analysts believe that Mr Gardini and his family are doing well out of the fusion.

According to the Ferfin prospectus, META shareholders are receiving 15 Ferfin for four META, a valuation which was initially judged by many to be

initially judged by many to be on the modest side, and which has remained unaltered despite

the disposal of a 70 per cent stake in the Standa retailing

chain to the television mag-

in the first half, should be this transaction and from cash enough to finance an "excep-

tionally high level of investment," put at around SFr500m. Mr Jucker said Alusuisse's activities, at both operating and holding company levels, had fiscal disadvantages. As a result reorganisation based on the formation of a holding company to act as group par-ent is planned. A decision is expected in about a year

The company plans to return to the capital market next week with a SFr150m, eightyear bond issue bearing a 4.75 per cent coupon. Subordinated bank loans would be gradually repaid from the proceeds of

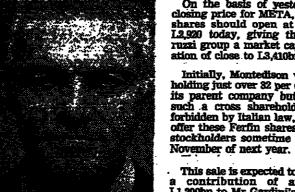
Alusuisse also announced that it has acquired a 50 per cent stake in the German packaging company Weidenham-mer Packungen, a specialist in composite cans with 400 employees and annual sales of DM60m (\$32.2m). The group is also negotiating to take over a

plastics processor in Germany. Alusuisse is also to participate with Amag (Austria), Hoo-govens (Netherlands) and Ganges (Sweden) in the creation of a second aluminium

smelter in Iceland with a final capacity of 200,000 annual Market debut for Ferruzzi Finanziaria

> On the basis of yesterday's closing price for META, Ferfin shares should open at about 12,920 today, giving the Ferruzzi group a market capitalisation of close to 13,410bm. Initially, Montedison will be holding just over 32 per cent of its parent company but since such a cross shareholding is forbidden by Italian law, it will offer these Ferfin shares to its stockholders sometime before

This sale is expected to make a contribution of around L1,200bn to Mr Gardini's crash programme for cutting Monted-ison and Ferruzzi's combined borrowings, which at the beginning of the year stood at around L11,000bn.



Raul Gardini: doing well out of the merger the disposal has led to a net

increase in META's capital of

(Mr Gardini's father-in-law) since their holding will fall nate Mr Silvio Berlusconi for L969bn (\$700m). from 100 per cent to just under

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### **Hachette** in Spanish books deal

By George Graham

HACHETTE, the leading French publisher, has agreed to buy Salvat, the fifth largest publishing house in Spain, for around FFr350m (\$55.3m).

The purchase of Salvat fol-lows Hachette's two big US acquisitions earlier this year of Diamandis, the magazine group, for \$712m and of Gro-lier, the encyclopaedia pub-

lisher, for \$470m.

Like Grolier, Salvat specialises in the reference books market and is expected to give Hachette a strong footbold in the expanding Spanish lan-

guage publishing market. Around a quarter of Salvat's sales are already in Latin

Hachette, which is expected to make profits of around FFr300m on sales of around FFr22bn this year, had built up a large cash position in anticipation of being awarded the ligners for France's point told. licence for France's main television channel last year.

Most of this position has been used on acquisitions, but the group is expected to raise up to FFrIbn more from the sale of an important Paris property, site of Hachette's 49 per cent subsidiary, Nouvelles Messageries de la Presse Pari-sienne, the leading French

sienne, the leading French newspaper distributor.

Chargeurs, the industrial holding company, is discussing the sale of its Spontex unit with Minnesota Mining and Manufacturing of the US. Spontex specialises in cleaning materials and sponges.

### Two Dutch publishers buoyant

**ABB** heads

for strong

profit gain

ASEA BROWN Boveri (ABB),

the Swedish-Swiss electrical engineering group, yesterday reported profits (after financial

items) of \$260m for the first six months of its existence. The

group said this was roughly in

line with expectations despite

high merger costs.

ABB forecast strong increases in profits for 1969 when the effects of its massive

restructuring would start to emerge. The group is in the process of decentralising,

reducing overheads and com-

remaining overneans and com-bining its distribution and sales forces, which it expects to lead to lower production and distribution costs, and greatly improved market coverage. Turnover totalled \$8.50bn, an

increase of 30 per cent for com-

parable units once acquisitions and divestments are taken into account. Order intake amounted to \$9.28bn in the first half, a 15 per cent rise

adjusting for acquisitions and

ABB took over the electrical engineering operations of Asea of Sweden and Brown Boveri of

Switzerland with effect from

January 1988 and is owned

equally by Asea and Brown Boveri. ABB said there was

considerable scope for improv

ing earnings in most of its business areas and regions. It expects earnings for the second half to be higher than in the first six months.

in 1989

By Sara Webb

in Stockholm

By Laura Raun in Amsterdam

ELSEVIER and Wolters Kluwer, the two big Dutch publishers, reported buoyant first-half carnings thanks to strong profits from their scien-tific and professional publica-

Both companies also forecast higher profits for 1988 as a whole, rounding out a pic-ture of a healthy publishing industry. Earlier this week, NU, the largest local publish-ing group, amounced a 42 per cent gain in first-half net profit.

Elsevier said its earnings surged 25 per cent to Fl 101m (\$48m) from Fl 81m following across-the-board improveally strong scientific journals. Strong advertising revenue at Elsevier's two newspapers also

helped.

However, per share earnings rose a more modest 18 per cent to F1 1.88 as a result of shares issued at the time of the company's bid battle with Wolters Samson for the Kinwer group.

Elsevier, which ranks number three among publishers, emerged from the takeover

emerged from the takeover tussle with a 33 per cent stake in Wolters Kluwer. Its net working capital fell 29 per cent to Fl 169.5m from cent to Fi 169.5m from Fl 240m because of the costs involved in acquiring the Wolters Kluwer stake, although the dividend income helped fael a rise in earnings from non-consolidated companies.

Profits at Wolters Kluwer climbed 20 per cent to Fl 36m.



### Credit Commercial de France

U.S. \$250,000,000

Floating Rate Notes due 1994

For the six months 30th August, 1988 to 28th February, 1989 the Notes will carry an interest rate of 9.04% per armum with a coupon amount of U.S. \$457.02 per U.S. \$10,000 Note. The relevant interest payment date will be 28th February, 1989. Listed on the Luxembourg Stock Exchange



#### Creditanstalt-Bankverein

U.S. \$150,000,000

Subordinated Floating Rate Notes 1996

For the six months 30th August, 1988 to 28th February, 1989 the Notes will carry an interest rate of 91/6% per annum and coupon amount of U.S. \$229.08, päyable on 28th February, 1989.

Bankers Trust

Agent Bank

These Bonds having been sold, recovers assess; as a maser of record only.

U.S. \$140,000,000



#### Osaka Prefecture

93/s per cent. Guaranteed Bonds Due 1993 unconditionally and irrevocably guaranteed as to payment of principal and interest by Japan

Issue Price 1011/2 per cent.

Bank of Tokyo Capital Markets Group

Daiwa Bank (Capital Management) Limited

Goldman Suchs International Corp.

Merrill Lynch International & Co.

Nomera International Limited

Chase Investment Bank

Daiwa Europe Limited

Kleinwort Benson Limited

J. P. Morgan Securities Ltd. **Banque Paribas Capital Markets Limited** 

Credit Suisse First Boston Limited Deutsche Bank Capital Markets Limited

**IBJ International Limited** 

Kredletbank International Group Morgan Stanley International

Salomon Brothers International Limited

Senwa International Limited Sumitomo Finance International SBCI Swiss Bank Corporation Investment banking

Union Bank of Switzerland (Securities) Limited S.G. Warburg Securities Yamaichi International (Europe) Limited

ALIGUST 1988



### THE KINGDOM OF DENMARK

£100,000,000 Floating Rate Notes due 1998

In accordance with the provisions of the Notes and the Agent Bank Agreement between The Kingdom of Denmark and Citibank, N.A., dated 22 November, 1983, notice is hereby given that the Rate of Interest has been fixed at 12.5% pa and that the interest payable on the relevant Interest Payment Date. November 30, 1988, against Coupon No. 20 will be £1,553.96.

September 1, 1988, London By: Citibank, N.A., (CSSI Dept.),

Weekly net asset value Tokyo Pacific Holdings (Seaboard) N.V.

> on 29/8 US 155.49 Listed on the Amsterdam Stock Exchange

Information: Pierson, Heldring & Pierson NV.

### **Interest Rate Change**

Allied Irish Banks plc announces that with effect from close of business on 30th August 1988, its Base Rate was increased from 11% to 12% p.a.



- Britain, Belmont Road, Uxbridge, Middlesex UB8 ISA. Tel: (0895) 72222 and branches throughout the country.

### **NEW INTEREST RATES**

Increased by 40 p.a.	PERSONAL LENDING	Interest rate % p.a.	Annual percentage rate%				
With effect from 1st September 1988							

1.50	Home Improvement Loan	14.00	15.00
1.00	HomeOwner Reserve	16.00	16.90
1.80	Home Management Account	21.00	22.70
3.00	Vector	21.00	22.70
3.00	CheckOver	21.00	22.70
3.00	Standard Debit Interest Rate	27.00	<b>29.</b> 80

With effect from 29th September 1988

1.20	FlexiLoan	19.20	20.90
1.50	Save and Borrow Account	21.00	22.70



MIDLAND BANK PLC, 27 POULTRY, LONDON EC2P 2BX

# Opening in Frankfurt

Banking Group Ltd.

# **SUMITOMO BANK**

is pleased to announce the opening of its new subsidiary on the 1st of September 1988.

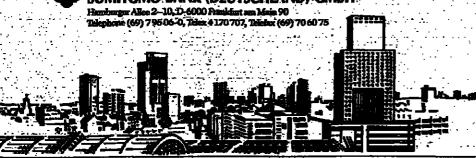
The main businesses are

- O underwriting
- O sales O and dealing

of DM securities.

Please contact the Managing Directors Mr. Dr. Michael Osthoff and Mr. Yoshimitsu Okamoto.

Mr. Katsuhiko Noguchi Advisor to the Management SUMITOMO BANK (DEUTSCHLAND) GMBH.



## Foreign banks find going hard in Tokyo

Stefan Wagstyl looks at a post-deregulation dilemma

FOREIGN BANKS in Japan have been left behind by the explosive growth of the Tokyo financial markets. With a few have failed to take advantage of Japan's financial liberalisation in the 1980s. And in the face of intense competition from the Japanese banks, they are unlikely to find the next five years any easier than the last five.

"It's a lot harder to make money here as a foreign bank than in Hong Kong, London, or New York," says Mr Robert Binney, general manager of Chase Manhattan in Japan.

It was not meant to be like this. Before the Japanese authorities began to deregulate 1980s, it was widely supposed by bankers that liberalisation would open opportunities for profit. US and European banks lobbied eagerly for the chance to compete directly with the Japanese banks in serving Japanese industry.
But in practice, it is the Jap-

anese banks which have pained most from deregulation taking advantage of rule changes which allowed them into fields previously reserved for foreigners.

European banks in particu-lar are still expanding their business in Japan. Both Barclays and National Westminster, the two largest UK banks, have invested in upgrading their operations in the past year. They hope that contacts made in Japan will win business from the growing number of Japanese companies established in Britain. This desire for closer links is also reflected in NatWest's plans yesterday

Collectively, however, foreign banks are in a worse posi-tion than they were before liberalisation began. The foreign share of the assets of financial institutions has fallen from 4.4 per cent in 1979 to 3.8 per cent last year, according to the Bank of Japan.

The foreigners' share of the profits cake has shrunk to a few crumbs - from 3 per cent of total bank profits in 1979 to less than 1 per cent last year.

The figures, prepared for the Japanese tax authorities, almost certainly make things Moreover, much of the benefit of operating in Tokyo accrues elsewhere - Japan business from Japanese companies in the US or the UK, for example,

Also, there are markets in which overseas banks do well, notably foreign exchange, where they have the advan-tages of skilled staff, strong international links and a long-established presence in Tokyo. But even here foreigners' market share has fallen, from 38.5 per cent to 31.4 per cent since 1979. Moreover, foreigners as a group - with signifi-cant exceptions - have failed to turn this bastion into a plat-

form for launching attacks on

BY BALANCE SHEET SIZE

Union Bank of Switzerland

Aigemene Bank Nederland

Westdeutsche Landesba

Swiss Bank Corporation

Société Générale Crédit Lyonnais

new emphasis on growth in profits, not in assets. These moves partly reflect conditions in Tokyo and partly the gen-eral need of American banks to shrink their assets in view of Third World debt problems. These pressures have been reinforced by the ratification of

TOP TEN FOREIGN

(1987)

tough international standards on capital adequacy this summer by the Bank for Interna-By contrast, banks, with stron

So where do the foreign loans on to their

The full-service banks were among the first to establish themselves in Tokyo after the Second World War and grew into the biggest foreign lenders to Japanese industry. But in the 1980s they have been forced to cut their assets, largely because they were particularly severely hit by Third World debts. In Japan, these banks have been selling loans to other companies - mainly Japanese regional banks and

onger bala tinued to books in o	ance life assurers. take Costs have also	life assurers. Costs have also been cut. Chase Manhattan has reduced				
BANKS	IN JAPAN					
	-TAX PROFITS					
(1987)		Ybn				
(2)	Bankers Trust	4.32				
(1)	Chemical	2.31				
(4)	Morgan Guaranty	2.26				
(7)	Irving Trust	2.12				
(5)	Korea First Bank	1.94				
(9)	Banque Paribas	1.52				
(33)	Hongkong & Shanghai	1.47				
(8)	First Chicago	1.42				
(10)	First Interstate California	1.36				
2.2						

Banque Nationale de Paris.

banks go from here? How can they continue to justify the cost of staying on in Tokyo when net return on assets last year averaged 0.15 per cent, about half the level for Japanese banks?

Banks say there are two fundamental reasons why business has been so difficult. The first is that Japanese companies prefer to stick to long rela-tionships with their bankers. So newcomers have to spend much more time than else-where building contacts with

Even then, Japanese compa-nies usually do not give foreigners more than a small slice of their business. So the for-eign penetration in the market is lower than in the US or in the IIK

Next foreigners have little access to the huge pool of Japanese savers' deposits, where Japanese banks raise the bulk of their funds. Instead, overseas banks which want to lend first have to borrow the funds in the money market. In the 1980s, Japanese companies' credit rating has increased relentlessly as their cash reserves have grown - so hank margins have declined.

US banks, the traditional leaders among foreign banks in Tokyo, have reacted by cutting their loan books and putting a to build relations with Japanese industry. As a result, while European banks top the list in terms of assets, a small group of medium-sized US banks is the most successful in terms of profits.

Bankers Trust, Chemical Bank, Morgan Guaranty Trust and Irving Trust were among the first to switch the emphasis from lending to providing commission-based services. They boost this income by own-account trading, which in a good year - when markets are volatile - can generate substantial extra profits.

These banks sell skills in treasury management, in foreign exchange, money markets, and corporate finance. They tend to concentrate on the biggest Japanese companies -those which are often the most receptive to changes in trea-

sury management.

The aim is to stay a step ahead of Japanese banks which are quick to copy successful new products. "Just renting out the balance sheet in Japan is a mug's game," says an executive at one of these banks. The giant US retail banks.

headed by Citicorp, Bank of America and Chase Manhattan, have taken longer to turn from assets to profits - not least because they are carrying much larger loan books.

its total payroll from 660 to 580, for example, and Citicorp has trimmed its main banking staff by 100 to 400. Continental Illinois has closed its office in Osaka. Even top executives are having to live with the times

- Chase has sold its general
manager's landmark residence.

1.36 1.23

The picture is not entirely negative. Although Citicorp, for example, incurred a pre-tax loss last year of Y2.78hn much of this was accounted for by investments in services to retail customers. Unlike other foreign banks Citicorp is aggressively pursuing the indi-vidual customer. It plans to expand its branch network from six to perhaps 20 to 30 outlets. The consumer services staff has been increased by more than 100 to 500 in the past three years, cancelling out the cuts in the main corporate

banking division.
As the US banks shrink their balance sheets, so the European banks are expanding. Mr Koichiro Kitade, country treasurer for Citicorp, says: "The European strategy is totally different from ours."

The Europeans have sup-planted the big US banks as the biggest foreign lenders in Tokyo. With stronger balance sheets, they can afford to increase their loan books without worrying so much about

the new international rules.

Dr Hans-Dieter Laumeyer, neral manager of Deutsche Bank in Japan, says the Europeans are filling a need for loans in the market, as Japa-nese banks are close to their self-imposed lending limits.

quality of some of this business. Many Japanese companies turn to foreign banks not for long-term capital investment loans but for short-term funds to play the money mar-kets — an activity called zai-tech. The risks on these investments are usually very low; but so are the bankers' mar-gins. Moreover, it is a thin basis for building a long-term relationship with a company.

Nevertheless, European banks see this as a way of get-ting a foot in the door, enabling them to sell more profitable services such as treasury skills. "Lending is often a loss-leader," says Mr Stuart Matthews, banking analyst at BZW, the securities arm of Barclays Bank.

For Europeans and Americans alike, the trick will be identifying fields where they have a potential competitive edge over Japanese rivals, for example, serving subsidiaries of Japanese companies abroad.

It is also possible that fur-ther financial deregulation might work in the foreingers' favour. Full liberalisation of interest rates might allow overseas banks greater access to Japanese savings, which are a perennial source of cheap funds for Japanese banks.

However, more deregulation may simply mean more competition. For example, plans to further liberalise foreign exchange might allow Japa-nese securities companies (as well as foreign ones) greater access to the markets.

One British banker says despondently: "I can tell you we should be in niches in five years' time. But I can't say what they're going to be."

Some banks can hope to keep far enough ahead of the pack to make money from their niches, but the rest will be left wondering whether the prestige of being in Tokyo is worth the considerable cost.

#### Crash nlunges Australian broker into red By Bruce Jacques

in Sydney JACKSONS, Australia's first

isted stockbroker, slipped into the red for the year to June, showing the effects of the October share crash.
Mr Bob Plafflin, group managing director, yesterday announced a A\$7.7m (US\$6.2m)

net loss for the period, com-pared with A\$6.2m profits. The result largely reflects an effective A\$5m provision for doubtful debts. Jacksons, a leading under-

writer of the more speculative boom listings, was floated in July 1987 near the peak of the bull market at A\$4 a share, but its shares have fallen to around 70 cents following disclosure of a first-half loss of A\$2.3m. Yesterday's announce-ment confirmed that losses continued following the crash, forcing the group to carry out a restructuring.

Mr Pfafflin said the company had returned to the black since June. "Jacksons has now suc-cessfully restructured its scrip administration department, introduced a new finance broking service which is generating profit, developed an active options team and shifted its stockbroking emphasis to leader stocks supported more by selective research."

McIntosh Securities, the only other listed Australian broker, has yet to report its results.

#### Japanese stores group plans HK unit flotation

By John Elliott in Hong Kong

YAOHAN HONGKONG, owned JADHAN HONGKONG, owner
by Yaohan Departmentstore of
Japan, is to raise HK\$75m
(US\$9.6m) by floating a quarter
of its shares on the Hong Kong
Stock Exchange.
It will be the second Japanese company to chiath a Hong

it will be the second Japa-nese company to obtain a Hong Kong quotation. The first was Kumagai Gumi, the construc-tion company which floated its local unit in May last year. Japan is playing an increas-ingly significant role in Hong Kong's company and it absorb Kong's economy and it already has a big presence in the stores sector. Yaohan Hongkong operates two stores and is planning to use funds raised by the flotation to finance a third.

The Tarm sheets are varied at

The 75m shares are priced at HK\$1 each. Applications will close next Tuesday and dealings are expected to start on

### Eurodollar issues shelved after sharp fall of yen

By Our Euromarkets Staff

A SHARP fall in the yen against the dollar, after weeks of stability, threw several sectors of the Eurobond market into disarray, forcing the postponement of several new dollar ssues and an equity warrant

The turmoil began after the close of Tokyo stock and bond markets yesterday when officials of Japan's central bank said the yen's recent weakness against the dollar was too insignificant to require a change in the discount rate. The remarks promptly pushed US Treasury bonds more than a half-point higher and sent Japanese government, bonds tumbling. In addition, equity warrant bond prices fell over a point in the primary market, while in the secondary market traders said prices of the warrants themselves fell by

about 20 per cent. "It was one of the half-dozen worst days we've ever had," said a trader at one secondary

While the Bank of Japan's comments on its own currency came after the close of stock exchanges, the widespread expectation is that the key Nikkei index will open sharply lower today, reflecting increas-ing investor anxiety about the yen's slide against most major currencies. Current gearing ratios cause equity warrants to lose 4.2 per cent in price for every 1 per cent drop in the underlying stock price.

Daiwa Securities was said to have postponed the launch of a \$100m equity warrant bond offering for Marudai Food due to the drop in the equity war-

rant market. The firm fixed the coupon on \$200m equity warrant bonds for railway operator
Hankyu at the indicated 4%
per cent level, but said the
issue is trading at a hefty discount, of 96 bin.
In the primary market, the

dollar's surge unnerved the markets by driving up the prices of US Treasury bonds by as much as a half-point. Euro-dollar bonds, meanwhile, were unchanged to a more modest % point higher, as sales by Japanese investors cashing in on currency gains held prices in check.

#### INTERNATIONAL BONDS

As a result of wider spreads between Treasuries and Euroonds, the window snapped shut on the fingers of underwriters hoping to launch a series of new fixed-rate dollar Eurobonds and swap the proceeds into floating rate funds.
A single straight dollar Eurobond was launched, leaving deals for several other borrow-

ers'still in the pipeline. Finnish Export Credit issued a \$150m three-year Eurobond via Mitsubishi Finance. The AAA-rated bonds carry a 9% per cent coupon and a 101% issue price to yield 46 basis points over Treasuries. The bonds closed inside the 1% per

Meanwhile, yields on Japanese government bonds rose more than 10 basis points, an unusually large rise for the London trading day. Euroyen

bond prices fell a much more modest % point among shorter issues, with prices supported by a general shortage of paper. Deutsche Bank Finance, a Deutsche Bank Finance, a financing unit of Deutsche Bank, issued a DM600m six-year issue with a 6 per cent coupon and priced at 100%. The issue was lead managed by the parent which also guaranteed the bonds. West German domestic and

Eurobond prices eased. Domes-tic bond prices fell by as many as 25 basis points on the dollar's strength while the announcement of a new federal government bond next Monday also hurt sentiment. Euro-bonds opened firmer in line with the US Treasuries, but slipped from the day's highs as the dollar firmed. Prices closed unchanged to slightly easier. The markets are awaiting

the Bundesbank's announcement today on whether it will add more liquidity when it replaces a repurchase agreement of DM24.2bm

The Swiss straight bond market ended the day nar-rowly mixed, although Japa-nese equity-linked issues eased in line with the Tokyp stock market.

Two new Japanese borrow ers issued convertible debt in Switzerland as private placements. Japan Air System launched a SFr100m five-year issue with an indicated coupon of ½ per cent, while Apollo Electronics issued a SFr50m issue, also with a % per cent indicated coupon. Indicated yields to puts on the two issues are 3.47 per cent and 3.22 per cent respectively.

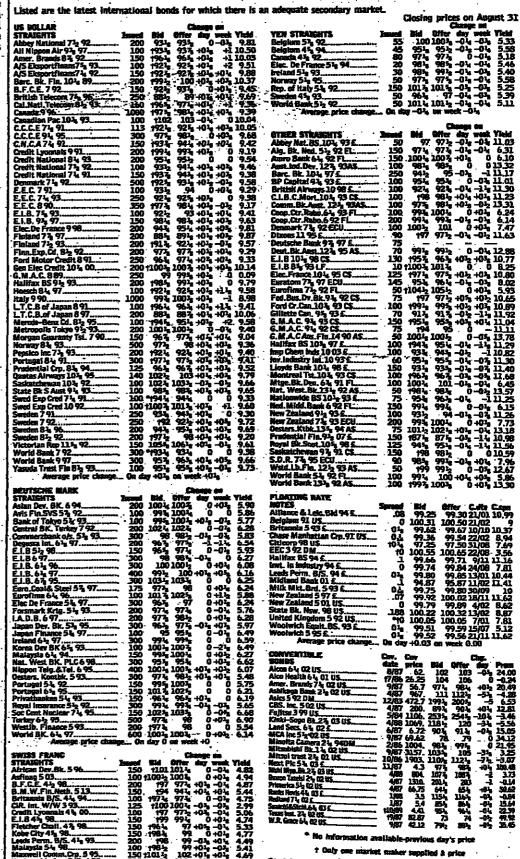
### Dead Sea Works 30% up at midway

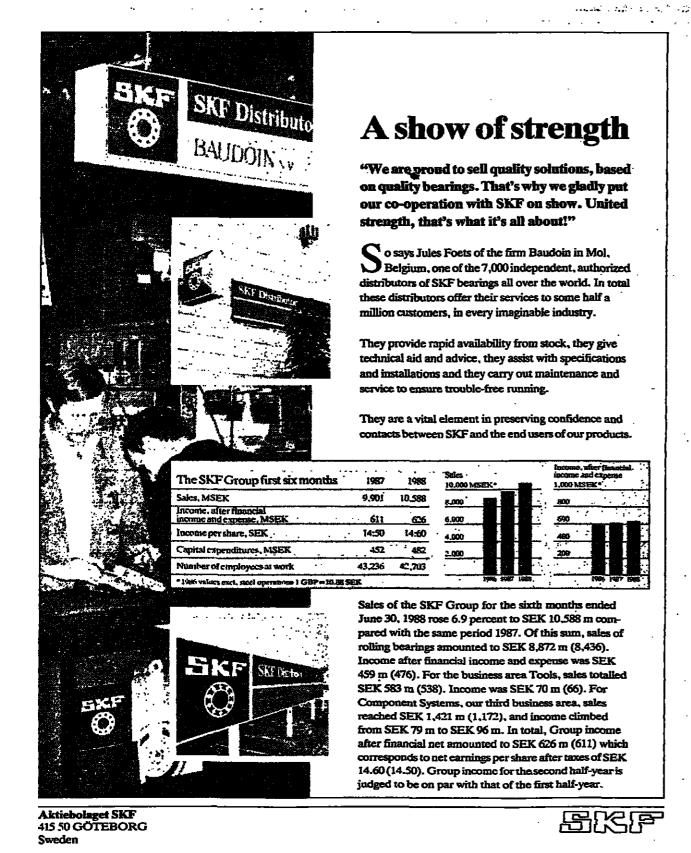
DEAD SEA Works, the Israeli chemicals company, reports a 30 per cent increase in firsthalf net profits to \$26m, mainly on the strength of improved world prices for potash, writes Andrew Whitley in Jerusalem. Sales at the state-controlled

company grew by the same perportion to \$251m as exports rose strongly. Dead Sea Works produces potassium chloride, magnesium chloride, table salt and bath salts from deposits in and around the inland sea Dead Sea Bromine, a subsid-

iary which is one of the world's largest producers of bromine and bromine compounds, dou-bled net profits to \$8m, in line with the general recovery chemical and petrochemical

#### FT INTERNATIONAL BOND SERVICE





#### **UK COMPANY NEWS**

Burmah pays £8m to expand

TEMBER 1 19

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BURMAH OIL, the hubricants and fuels distribution company, is expanding its speciality chemicals operation with the acquisition of APP Chemicals for £8m, writes Vanessa Houlder.

APP Chemicals is a European refiner and marketer of stactic polypropylene, a material used in construction, textile and paper converting index.

converting industries. It owns a UK operation at Market Drayton and a Netherlands based substitiary. Performance Polymers.

The newly-acquired company will join Burnah's coating division, which specialises in compounds for the cable filling industry and speciality waxes, polymers and resins for packaging and other industries.

other industries.

Burman said the acquisition was in line with the strategy of the speciality chemicals division of expansion in niche markets. In addition, APP's technology and markets are expected to be a good fit with other companies in the coatings division.

Burman's Speciality Chemicals side is comprised of five divisions: coatings, adhesives, printing inks, sealants and water management. In 1987, speciality chemicals produced a trading profit of £15.6m on sales of £173.8m.

Raine raises stake in Ruberoid ---

RAINE INDUSTRIES, the housebuilder hidding \$127m for Ruberoid, has increased its interest in the building materials group to nearly 15 per cent through additional jurchases in the market by an associate company, writes Clay Harris.

Takeover rules will now limit total market purchases by Raine and its associates to less than 30 per cent, since they falled to pass that threshold by yesterday, a formight before the offer closes on September 14. The Raine bid is final unless a competing offer emerges.

With its share price unchanged at 87p, Raine's main shares and cash offer is worth 234p. Ruberoid shares also closed unchanged at 253p, only Ip below Raine's cash alternative.

	<del></del>				
D	VIDE	VDS .	ANNO	UNCE	D.
	_ Cu	ment p	Date of a	Corres - ponding dividend	Total for year
erican Trust	frit 1	<b>今</b>		114	

American Trustint 1.25		
		- 3.4
CLF Holdingsint 0.73†		- ' 1 <i>7</i> 4:
Davies (D X) § Samular 13.	Oct 283	4: 1 - 4
Edinburgh Fundint 4	- 1 = 1 - 141 · 1	- 9.5
Erithint. 1,81	Nov 24 1*	- 3-
Guardian REint _ 3.5	Jan 6 3	- 8.24
Maciarianeint 1.75	1.25	- 331
Maxwell Commint 6%	Jan 4 6	- 14
Pearl	Oct 14 5	- ''' 12.5'
Pentland Indsint 0:5	0.14	- 0.64
Slough Estatesint 3.31	28	7.3
Stat-Plusnt 1.25		- 2.25
Sieel Burrill		- 10
Sunleigh Elect.§int 0.55†		- 0.56

		<u> </u>
The following companies have notified dates	Howster lods.	Sept 6
of board meetings to the Stock Exchange.	British Mohair Clinton Cards	Sept 15
Such meetings are usually held for the pur-	- Canton Carda	_ Sept.29
pose of considering dividends. Official Indica-	Costs Vivelle	8apt 19
tions are not available as to whether the	Degenham Motors	Sept 5
nous are nor namenal up to subtriet the	Delta	Sept.12
dividends are imprime or finals and the auti-	Enterprise Oil	Sec. 8
divisions shown below, are beand mainly on:	Constant Constant	Sect. 6
last year's timetables.	Hamilton Michael	Beot. 5
TODAY	Freeman Group: Handley Walter	· Sept. 8
Interims- Assoc. Henriques, Blackwood	Vin- Link	Sect.22
	Kity Little	Sept 12
Hodge, Cadbury Schweppes, Church & Co.,	McLaughlin & Harvey	Sept 7
Cooper (Alan), Cundell, English & Oversees.	MCLEOGRAM & METTY	
Grafton Group, Home Counties News., Kalon	Nursin & Peacock	Sept. 7
Group, Lumbert Howesth, Record Hidge, UK	RTZ Corp	Sept 14
Paper, WPP Hidgs.	Spirax-Sarco	' Sept.14
Finels- Highgate & Job, Kleinwort Benson Int.	Tarmac	Sept. 79
Inc. Bd. Fd., Polytechnik Electronics.	RTZ Corp. Spirax-Sarros Tarring Triange Triange Int.	<ul> <li>Sept.19</li> </ul>
FUTURE DATES	Tysons (Contractors)	Sept.19
Interime-	<b>Marke</b>	
1.75	Magnetic Materials	Sect. 12
ASS Barnett Kinnings Sept.14	Marivale Moore	Sect.12
Asset Trest Sept. 7	Poters (Michael)	Sept.15
Aurora	Proclain Matrie Tet	Sept.13
Sept. 7	Precious Metals 7st	Sect 2
Booker Sept. 6	Weller (Shire )	Bept, 9
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Lower interest and investment income holds back profit rise

within two years.

PENTLAND INDUSTRIES, the

industrial group that derives most of its income from its holding in Reebok sports shoes, has recovered from its

setback last year and has increased pre-tax profits by 12

per cent to £38.5m in the first half of 1988. Mr Stephen Rubin, chair-

man, said the group intended to reduce reliance on Reebok

by making a "quantum leap" with a substantial acquisition. Pentland's sales increased to \$343.4m (£208.4m) in the six

months to June 30. Earnings per share rose to 8.51p (6.94p). The board is raising the

interim dividend to 0.5p

(0.135p) as the first stage in a new policy of increasing the dividend in line with "general

equity yields".

The group has restated last year's interim profits to reflect

the exchange rate of \$1.88 at its year-end. Last year's interim

results - pre-tax profits of £39.7m on sales of £234.2m - were struck at an exchange

Pentland's profits fell last

year because of the impact of the weak dollar on its income from Reebok, which is based in

the US. It also suffered from

rate of \$1.61.

### MCC just ahead at £72m halfway

The Canadian Government has ordered an investment review of Maxwell Communication Corporation's entry into Canadian text' book publishing, writes Robert Gibbens in Montreal When MCC bought US-based Science Research Associates in July, it also

acquired a Canadian textbook publishing and distribution sub-sidiary. The Ottawa Government has retained the right to review foreign acquisitions in book publishing and other cultural fields, a highly sensitive area politically. The Cabinet has also said foreign buyers of publishers must find a Canadian partner

Corporation, Mr Robert Max-well's printing, publishing and information company, yester-day announced half year operating profits of £50.7m, an increase of 33 per cent on the same period last year.

Sales at £505.7m were up 37 per cent and the company said that the bulk of the profits had some from core businesses and an associated company, Dono-hue of Canada, the pulp and newsprint manufacturer.

Pre-tax profits were however static at £71.9m compared with £70.5m in the six months to June 1987. The biggest influence on the figure was a drop in net interest and investment income from £32.1m to only £9.7m this time. Mr Maxwell, chairman, said the stock market crash and acquisitions probably meant

**BSR** says

By Philip Coggan

merger will

not proceed

BSR INTERNATIONAL, Hong

Kong-based electronics group, announced yesterday that its

merger discussions with an unnamed party had been dis-continued. The news caused

BSR's shares to fall 15p to 66p.

The company revealed on

July 11 that it was in merger talks, but in a statement yes-terday, BSR said the party with which it had been hold-ing discussions had decided at a late stage that it was unable

to proceed with a merger.

in the midst of the merg

talks, BSR reported interim pre-tax profits 47 per cent lower at £3.1m. However, the company said yesterday that it was confident that it could

expand its electronics activi-ties independently.

In order to strengthen its

management team, the group has decided to separate the positions of chairman and chief executive. Mr Brian

Christopher, who currently combines the reles will remain as chairman and a new chief executive will be appointed

the end of large contributions to the balance sheet from the in the second half.

For the first time, it seemed, treasury function. We have converted treasury earnings to the operation of our core businesses," said Mr Maxwell recently returned from an unprecedented summer holiday of nearly four The chairman said the greater proportion of the company's earnings would be made

he was going to leave the announcement of the compa-ny's half-year results to his sons Ian and Kevin, joint managing directors and Mr John Holloran, vice-chairman. The man who personifies MCC had to be at a meeting on the agreed takeover bid for AGB. Ian, Kevin and John held

centre stage - for about 15

increase to £38.5m at half-time

the disruption to Reebok's

business caused by political unrest in South Korea, where its production is concentrated.

holds a 32 per cent stake, has since recovered from that

unrest. In the past year it has undertaken a series of acquisi-

tions to diversify into new

areas of sports shoes and cloth-ing. Reebok's contribution to

profits rose by 5 per cent to

saw profits rise by 47 per cent

to £8.7m. Mr Rubin said that Holmes, its electronics com-

pany in the US, had benefited

from the impact of the East

Coast heatwave on sales of its fans. Similarly Asco, which

sources footwear and clothing

in the Far East, had been buoyed by more competitive

Far Eastern exchange rates. The UK footwear side has seen sales increase, but mar-

gins have suffered because of

competitive market conditions. Pentland has spent the past

Mr Rubin is prepared to spend up to \$250m on a suitable com-

ar searching for acquisitions.

Pentland's other interests

Reebok, in which Pentland

Pentland recovers with 12%

minutes - until Robert Max

well rolled up

He announced that the company was planning to package its expertise across the whole field of communications from print to broadcasting to advise Third World governments on how to set up national communications systems.

Mr Ian Maxwell, responsible for most of the French operations, said a greenfield site had been bought near Charles de Gaulle airport to build a newspaper contract printing plant. When com-pleted it will print copies of The European, Mr Maxwell's

new European daily
Mr Ian Maxwell also said the
company still intended to launch a mid-market French national newspaper and print

COMMENT

Pentland's problems are obvi-

ous. In the mid-1980s, when

aerobic shoe sales – and mar-

ket indices - were soaring, its holding in Reebok turned it

into one of the whizziest stocks

on the London market. When the aerobics fad fizzled out and

Reebok seemed rather more

mature, its whizziness faded fast. The share price, at 114p yesterday, started to fall last summer, fell further after the crash and still shows no sign of

recovery. Pentland has pro-

duced respectable results from its other interests. It can even

argue that its shares are worth

125p, on cash and Reebok alone. Yet the City is still

waiting, and waiting, for the

acquisition it has promised for so long. And the shares will linger – on a prospective p/e of 6.5 with projected profits of £80m – until it delivers.

than analysts had been expect-

ing and goes some way to sil-encing the sceptics who felt that Sunleigh's growth was pri-

marily acquisition led. With no purchases post-crash, these fig-

ures have proven it has an organic track record to stand alongside its well-documented

turnround record. That said,

its PowaKaddy trollies have not exactly bowled over US golfers, despite the much vaunted American obsession with healthy bodies. But there are 16m golfers in the US and

a prospective p/e of about 8, way down on its pre-crash mul-

tiple - but that did include a great deal of hope value. The

problem with this rating, which should improve, is that

it does not support acquisition

lv bette

tomer base. pany in the consumer products field. The group had been looking at "half a dozen deals every week", but so far they, had "all been too expensive".

### Pearl advances 32% in first half as FAI ups stake to 8.09%

By Nick Bunker

service life insurer, eased 1p to 470p last night despite news that Mr Larry Adler has raised to 8.09 per cent the stake in Pearl held by FAI, the insur-

ance group which he controls. FAI first emerged publicly as a large Pearl shareholder in January 1988, when Mr Adler, the Australian corporate raider, disclosed a 5.43 per cent stake amid market comment that Pearl was a bid candidate. News of FAI's latest increase

in its holding came shortly after Pearl's announcement yesterday of a 32 per cent rise in half-yearly pre-tex profits to

Pearl ranks about 15th biggest in premium income terms among the UK's life assurance companies. But with around 6,000 agents in the field it is second only to Prudential Assurance among the stock market-quoted home service insurers, which sell policies and collect premiums by door-to-door vists to their cus-

Since it does not carry out

SHARES IN Pearl Group, home its actuarial valuation of its life funds until the year-end, Pearl's interim figures for its life side represent a provisional figure determined by halving the corresponding totals for

the previous full year.
On this basis, Pearl showed profits of £11.13m on its industrial branch business, up from £9.7m in 1987. Ordinary branch, life profits rose from £9.74m to £11.5m.

The main interest in the figures was provided by a 20 per cent increase in the interim dividend to 6p, and signs of a healthy turnround into profit of Pearl's non-life operations.

The group nearly halved its non-life underwriting losses from £10.25m to £5.75m, with most of the improvement con-centrated in its home service

Underwriting losses on nonlife home service business declined from £8.23m to £3.36m. an improvement sufficient to give Pearl a £760,000 trading profit in that segment of its'

### **GRE** improves 35% to £112m at six months

GUARDIAN ROYAL Exchange, the composite insurer, said yesterday that it was increasing its stress on growth in premium income after several years of tight discipline on underwriting, which helped the company achieve a 35 per cent increase in pre-tax profits to £111.7m in the six months

with shareholders' funds now about 82 per cent of its annual non-life premium income, GRE is not ruling out deploying its financial strength

to make acquisitions. Mr Peter Dugdale, GRE's chief executive said: "It is conceivable that we might look at some acquisitions in the finan-cial services field not directly related to what we are doing

Mr Dugdale declined to comment however on the outcome of Inland Revenue inquiries which followed allegations by its former chief tax accountant of irregularities regarding reinsurance payments in the 1970s. "The Inland Revenue has been through our books. There has been an almost complete silence for a very long period. I don't see this as a major prob-lem," he said.

The group is raising its interim dividend 16.7 per cent to 3.5p, after increasing after-tex profits from £47.9m to

Non-life underwriting losses fell from £31m to £11.5m, on premiums up 7 per cent at 6828.5m. Life assurance profits rose 30 per cent to £14.8m. Group investment income was up 9 per cent at £108.4m.
The powerhouse of GRE's

improved performance was the UK. In spite of a net £10m of

late claims from last October's hurricane, GRE reported a pure underwriting profit of £12m in the UK.

Its results underlined the extent to which the composite insurance sector is reaping the benefits in the UK of premium rate increases in non-life business and a stabilisation of motor claims frequency.

GRE laid heavy emphasis however on the growth of its UK life side, where its joint venture with the Hambro Countrywide estate agency chain helped produce buoyant sales of mortgage related prod-

COMMENT

Primarily a UK non-life insurer, GRE is well-placed to weather relatively well the incipient down-swing of the non-life underwriting cycle US niche operation, in personal lines and marine insurance, is managing break-even underwriting results: and its West German subsidiary, aided by officially-sanctioned motor rate increases, lifted pre-tax profits 20 per cent to £7m. But while GRE is obviously very competent in its operations, it cannot achieve better than mediocre while its solvency margin is 82 per cent. Even assuming full year pre-tax profits of £235m, GRE will make only a 14 per cent after-tax return on its January 1 shareholders' funds of £1.08bn. The planned growth in non-life premiums is welcome but if GRE were to implement the 20-30 per cent per annum increases in dividends it can probably afford to fund well into the 1990s, that would help

# Record first half year

EXCHANGE AND ROOM AS EXCHANGE INTERIM STATEMENT

#### Highlights from the Interim Statement

### ★ Interim dividend up by 17%.

★ 36% increase in pre-tax profits.

- ★ Long-term business profits growth 28%.
- ★ 45% advance in earnings per

Structed from the Company's Accounts for the year 1967 which re an unqualified Auditor's Report and which have been filed with the Registrar of Companies.

#### Summary of Estimated Results for the half year ended 30th June 1988

indrigen (1995). Open seen op de de lander (1995) en de lander (1995) en de lander (1995) en de lander (1995) en de lander (19 Open seen de lander (1995) en d	1988 (maudited)	1987 (unandited)	1987* (audited)
	£m	£m	£m
Premiums - short-term business	828.5	. 795.0	<u>1,448.6</u>
Investment income	108.4	101.7	204.1
Underwriting results short-term business long-term business	(11.5) 14.8	(31.0) 11.5	(63.9) <u>24.8</u>
Profit before taxation Taxation and minorities	111.7 41.7	82.2 34.3	165.0 57.3
Profit attributable to shareholders	70.0	<u>47.9</u>	107.7
Earnings per share	8.7p	6 <u>.0</u> p†	<u>13.4</u> p†
Dividend per share	3.5p	3.0 <sub>p</sub> †	<u>8.2</u> p†
Shareholders' funds	1.263.6m	£1.341.1m	£1.086.8m

				7		
Results by Te	rritories	Vásta ( 1907) (ja	3-1071	770		71. *
(before taxabon)		6 months 1988	<b>不被</b>		st 6 mouth 1987	<b>5</b>
	Net	- Under •	Invest-	Net	Under- writing	investa ment
	Frenkus	Lux	Incused I	Cre	Result £m,	£m
Australia	39.3	(3.9)	83	38.6	(4.4) (1.3)	8.0 6.5
Canada Germany	73.9 134.1	(6.7)	13.7	437.9	- (7.5)	13.3
U.K. U.S.A.	336.5 70.5	11.9	43.1 8.3	313.5 68.4	1.8	8.0
Miscellaneous	174.2	(11.7)	26.2	171.0	(4.9)	21.9
	<b>828.5</b> · · ·	(11.5) **	108.4	795±0-···	- <u>(31.0</u> )	101.7

Life New Business	ar i jak	,
	First 6 months 1988	First 6 months
	£m	£m
New Suma Assured	3,856:7	3,283.6
New Annuities per annum	90.5	72.9
New Annual Premiums	51.7	41.5
New Single Premiums	166.9	156.3





#### SUNLEIGH ELECTRONICS. (£26,000) was due to small acquisition costs. COMMENT

This result is s

Sunleigh Electronics up

22% at interim stage By Flona Thompson

USM-quoted electrical and elec-tronics manufacturing group, yesterday reported interim pre-tax profits 22 per cent higher at £1.04m. Sales for the six months to July 2 advanced by 29 per cent from £7.04m to £9.1m.

Mr Tony Merryweather, chairman, said two areas had performed particularly well: the Powakaddy battery-powered golf trolley manufacturing business and the Eastleigh machinery automation and applications engineering opera-

Eastleigh manufactures a range of small machines tools, such as automated lathes, drills and milling machines. A strong growth market is pro-viding equipment for tamper-evident tops on bottles for the

pharmaceutical industry.

PowaKaddy, world leader in motorised golf trollies, made the largest contribution to profits. Its biggest market is the UK, with sales growing in Australia and northern Europe.
US sales were increasing but

Mr Merryweather admitted it was a tough nut to crack with was a tough nut to crack with the traditional American reli-ance on golf carts, which negate the need for a moto-rised trolley for the clubs. However, the greater emphasis on health had helped boost sales, he said.

Prospects for the second half were encouraging, with healthy order books, said Mr Merryweather. The first half growth was all organic, but the company intends to continue to seek suitable acquisitions. We are interested in leisure industry engineered products which can be manufactured by us," he added.

Karnings per share rose from 3.3p to 3.86p and an interim: dividend of 0.55p (0.47p) was declared. Tax took £330,000, compared with £248,000. An extraordinary debit of £28,000

Isis confident after recovery in profits Isis Group, OTC-traded construction engineer, feels set

to capitalise on its profits According to Mr Lamont Park, chairman: "Profits are on

plan and with the improved contributions from the core businesses and the reduced, burden of interest, results are ahead of the corresponding period last year."

In the year to end-March, Isis reported pre-tax profits of £1.49m, against a loss of £2.17m, on turnover of £29.28m (£114.57m).

### Mr Merryweather reckons he will attract enough of them to make the promotional costs worthwhile. The City is looking for £2m for the full year, which puts the shares on a propositive plant of the promotional costs. BAT/Farmers deal closer

BAT INDUSTRIES, the joint statement that Mr Rich-tobacco-based multinational, and Marquardt, the Washing-ton insurance commissioner, has come a step closer to completing its agreed deal to buy farmers Group, the US insurer, with the news that insurance regulators in Washington state have reversed their veto of the takeover. BAT and Farmers said in a

approved the purchase after-BAT gave commitments to continue hospital medical malpractice insurance and non-smoker premium discounts. BAT still needs to overturn vetoes in Oregon and Idaho.

do the trick more rapidly.

### Ashley Industrial Trust p.l.c.

(Registered in England Number 421037)

Placing of 18,750,000 new ordinary shares of 5p each at 80p per share

by McCaughan Dyson Capel Cure (UK) Limited and Rights Issue of 25,204,237 new ordinary shares of 5p each at 80p per share

Share Capital tssued and now being issued fully paid Authorised £4,058,000 in ordinary shares of 5p each £2,897,836.55

Ashley industrial Trust p.l.c. is engaged in food retailing and distribution, the manufacture of plywood and blockboards and investment dealing.

Listing Particulars relating to Ashley Industrial Trust p.l.c. are available in the statistical service maintained by Extel Financial Limited and copies may be obtained during normal business hours on 1st and 2nd September, 1988 at the Announcements Office of The International Stock Exchange and during normal business hours on any weekday (Saturdays and public holidays excepted) up to and including 14th September, 1988 from:

McCaughan Dyson Capel Cure (UK) Limited 65 Holborn Viaduct London EC1A 2EU

Capel-Cure Myers Capital Management Limited 65 Holborn Viaduct London EC1A 2EU

Ashley Industrial Trust p.l.c. 6 Stamford Road Bowdon, Altrincham Cheshire WA14 2JU

Member ANZ Group Member of The Stock Exchange Member of The Securities A

1st September, 1988

### Slough matches City expectations

biggest industrial property investment and development company, yesterday satisfied the market with interim profits at the top end of expectations. The shares, which had risen in dvance of the announcement,

held firm at 235p.

Pre-tax profits for the six months to June 30 were £34.1m, compared with £28m last time, and resulted in earnlast time, and resulted in earlings per share of 8.8p (7.4p). Shareholders will receive an interim dividend of 3.3p (2.8p). Sir Nigel Mobbs, chairman, said prospects for the rest of 1988 were good. "The UK property market has remained." erty market has remained strong with continued demand

SLOUGH ESTATES, Britain's improved rental values," he About 80 per cent of Slough's interests are linked to the industrial property market, which in recent months has been providing higher returns than office or retail property.
Its latest figures show across

the board increases in operating income. Investment income, largely the rents it receives from established properties, rose to £36.9m (£34.6m). Income from property trading, an area where Slough has become increasingly active, was up from £4.9m to £7.3m. The present development programme involves the conSlough's major measure of

domestic diversification has been the purchase in 1986 of 52 per cent of Bredero Properties, the town centre retail developer, whose figures were announced on Tuesday. Bredero contributed £1.8m to Slough's first-half operating income (£1m) income (£1m).

Unless the Government slams on the economic brakes, the commercial climate is propitious for Slough, at least over the next few months. Its extensive development programme

tres in south-east England.
During the first half, 597,000 sq
ft was completed.

is moving into a rising market and with much of its financing at a fixed rate, including a £150m Euro-convertible issue last May, it has protection against rises in interest rates. The strength of demand, which The strength of demand, which has been pushing up industrial rents, especially in the southeast, should increase both operating income and capital values. This suggests that the crucial net asset value figure, assuming it is not knocked by coverney movements, should

currency movements, should rise over the rest of this year to around 345p from 287p at the 1987 year-end. This would put the shares on a prospective dis-count of about 15 per cent, not abnormal for one of the big property investment groups.

### Acquisitive Erith advances 34% midterm

record half-year results, up 34.5 per cent on 1987, Erith disclosed that it is paying £3.87m for a private timber and builders merchant thereby completing a ring of nine trading outlets within the M25.

Against the issue of 2.5m shares, £750,000 three-year loan notes and £920,901 cash, it is buying J.P. Walshe, which is

based at Tooting and is strategically placed between Erith's existing depots at Greenwich

struction of 650,000 sq ft of space at Slough and other cen-

Erith group turnover in the first half of 1988 rose 18 per cent to £40.42m (£34.24m), while the profit worked through at £2.51m (£1.87m). In line with earnings rising nearly 35 per cent to 4.2p, the interim dividend is lifted 30 per

cent to 1.3p.

Mr Graham Davies, chairman and managing director, said the programme of improvements to existing branches and opening new ones on green field sites was making a positive contribution to profits.

Prospects for the future looked good, he said, and expressed confidence that

would be reflected in a significant increase in the year's

in 1987 Walshe achieved a pre-tax profit of £377,000 on turnover of £7.9m, and in the first half of this year turned in

Of the shares being issued for the acquisition, 1.7m will be the subject of a vendor consid-

### Packaging boosts MacFarlane to £3.3m

A 41.5 per cent advance in pre-tax profits was achieved by MacFarlane Group (Clansman), the Glagsow-based holding company with interests in packaging, printing and distribution. For the first half of 1988 profits were £3.28m, against £2,32m.

The interim dividend is increased from 1.252p to 1.75p with earnings per share rising from 4.8p to 6.61p after tax of

**Stat-Plus** 

continued

ued into 1988.

growth has

£1.15m, compared with £812,000. Turnover grew from £31.74m to £41.25m Sir Norman MacFarlane, chairman - who also heads Guinness, the drinks group - said that excel-lent results had been achieved in all four divisions and the prospects for continuing growth was extremely encour

He singled out the packaging division as the best performer

with nationwide distribution from 42 manufacturing and distribution outlets creating an efficient organisation with improved margins. "I would hope to duplicate what we have done in the packaging division in certain Europe countries," said Sir Norman.

Daniel Montgomery, the bottle closures company, was benefitting from long term con-tracts for pilfer-resistant bottle

closures and a recovery in orders from the whisky industry. A C W, which manufac-tures plastic moulding prod-ucts, had been particularly successful in its sales to the toiletries and detergent indus-

John T Clarke, a business recently acquired by the marking products division, had substantial export potential to Europe, said Sir Norman.

### Borland shares fall on warning By Philip Coggan

The consistent organic growth ware company quoted on the USM, fell nearly 6 per cent yes-terday after the group revealed which has been the feature of the performance of Stat-Plus Group since flotation contin-In the first half of the year

ond quarter. this retailer of office and legal stationery, and printer and publisher of law forms, saw its Borland is laying off around 90 of its 650-strong worldwide workforce and reorganising its turnover grow 26 per cent to £6.23m (£4.92m) and pre-tax sales and marketing departments. "We were building for tomorrow but we had to bring our costs in line with today" (£1.75m).
And in the opening two said finance director Mr Alan

Godwin directors had been negotiating for a major acquisi-

tion which was intended to

secure the company's financial position, a statement said yes-

terday. But these talks failed

and the group's position forced the directors to seek receiver-

THE - FINANCIAL TIMES - COLLECTION .

Collection.

ATRADUTOS OF EXCHIENCE

months of the current half trading fulfilled expectations, Henricks. After producing better-than-expected profits of \$7.7m (£4.6m) last year, Borland recently reported a downturn

Godwin Warren Control tant, as receiver.

GILT EDGED GIFTS FROM THE

said Mr Derek Bird, the chairman. The group had cash deposits of nearly 17m.

Earnings in the period moved up to 7.1p (5.1p) and the interim dividend is 1.25p

Sustems, manufacturer of com-puterised automatic car park-

ing systems, railway and min-

ing buffers and level crossing equipment, has gone into receivership. The Royal Bank

of Scotland yesterday appointed Arthur Young, Bir-

mingham chartered accoun-

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FINANCIAL TIMES

SHARES IN Borland advertising and marketing by \$500,000 to \$1m a month. International, US-based soft-costs more than doubled.

The commany has had a commany had become had bec

Rorland said it would absorb most of the restructuring costs that restructuring costs would push it into the red in the secin the current, second quarter
- which ends September 30 and would therefore expect to incur a loss in the period. The objective of the restructuring was to decrease expenditures

The company has had a che-quered record since it joined the USM in 1996 – its 1986/7 profits were lower than expected, prompting a reorganisa-tion of the group's research and development interests. Yesterday's 6p fall in the share price to 101p left it well short of the flotation value of 125p.

### Microfilm to fund £11m US buy with rights issue

in first quarter profits from \$2.87m to \$794,000. Turnover grew by 77 per cent but sales, rights issue to fund the \$18.6m (£11m) acquisition of Georgiabased company CMC, its first Godwin Warren in receivership

The UK group also estimated pre-tax profits for the year to June 30 of £4m and earnings per share of 13.6p. In both cases, this represents an increase of a third over 1987 levels. The final dividend is 2.25p, making 3.375p for the year, a 50 per cent increase.

Like Microfilm Reprographics, CMC has moved into the newer information storage techniques of scanning and

MICROFILM Reprographics, digitisation: the conversion of the microfilming burean, yes-terday announced a two-for-11 into a compressed digital form. for storage on magnetic tape or optical disc.

> Microfilm intends to raise £11.9m through a rights issue of 3.57m ordinary shares at 350p each. These will not be eligible for the final dividend.

> CMC made pre-tax profits of \$1.3m on turnover of \$11.8m in 1987. Interim pre-tax profits were 62 per cent up on the comparable period last year.

At the interim stage, Mr Red-mond said the costs of develop-ing scanning and digitisation techniques had held back

### TMD picks up £20m of billings with Yershon buy

TMD ADVERTISING Holdings, USM-quoted specialist agency, is buying fellow independent media buyer Yershon Group for a maximum consideration

of £4.5m. TMD, the only independent company in the sector with a stock exchange quote, has declared its aim to be one of the UK's top three independent space-buyers within a couple of

years.

The purchase of Yershon, which will add £20m-worth of billings, means that TMD will move up from tenth to seventh position in the closely-watched league table of biggest media spenders. This is on the basis

of the rankings to the end of June compiled by Media Expenditure Analysis (MEAL). The initial payment of £1.4m to the vendors of Yershon is being satisfied by the issue of \$53,659 new TMD ordinary shares, worth 164p each. Of these, 512,196 are being placed, with clawback provisions for existing TMD shareholders. existing TMD shareholders, along with a further £200,000 worth of new shares The deferred consideration,

up to a maximum of £3.1m, is based on after-tax profits for the three years to August 1991. Yershon made pre-tax profits of £206,000 in the year to March 31.

August Low

1409.4 (31st) 911.07 (30th) 1753.6 (31st)

#### MONTHLY AVERAGES OF STOCK INDICES Financial Times Government Securit Fixed Interest ...... 98.10 1470.0 220.5 25,783 97.36 1488.9 215.4 25,430 F.T.-Actuaries Industrial Group 500 Share Financial Group All-Share 974.10 967.39 961:83 1044.04 698.30 954.36 673.38 920.66 FT-SE 100 ... 1866.1 1847.2

August High

1514.7 (8th)

### **BICC** arm buys cables minority from GEC

By Bruce Jacques in Sydney

METAL MANUFACTURES, the Australian subsidiary of BICC, the UK cables and construction group, has bought out the 36.8 per cent minority in its energy cables offshoot, Cable Makers Australia, for A\$70m

makers Australia, for A570m (£33.3m).

The acquisition, from Britain's General Electric Company, will be followed by an immediate restructuring to form Australia's largest cables operation with an annual turnover exceeding A\$400m, Mr Glenn Dudley, MM managing director, said yesterday. The deal will be funded with a \$74m issue of 6.5 per cent

preference shares convertible to ordinary on a one-for-one basis from March 1990.

In a related development yesterday, BICC increased its interest in MM to about 63 per cent through the purchase of a 7.4 per cent stake from CRA; this leaves the Australian resources group with 12.6 per cent of MM.

BICC is buying the stake at about \$2.90 per share.

#### First half setback for **American Trust**

The net asset value of American Trust stood at 152.8p per share at the end of July, up from the 142.1p prevailing at the company's finan-cial year end in January, but 27 per cent lower than the

27 per cent tower than the stated figure in July 1987. Net revenue of the group, incorporating Edinburgh Fund Managers, the 53.8 per cent-owned subsidiary, fell 11 per cent to £2.64m (£2.96m) in the six months to July 31. Earnings per share for the

parent company improved slightly to 1.87p (1.77p), although those for the group as a whole declined from 2.49p to 2.33p.
The interim dividend is

lifted to 1.25p (1.15p).

As foreshadowed in the chairman's annual statement, the effects of continuing lower unit trust activity contributed to reduced taxable profits at Edinburgh Fund Managers in

the half year to end-July. On turnover of £3.44m (£4.18m), the pre-tax outcome was 23 per cent down at worked through at 10.2p (13.5p), and the interim dividend is maintained at 4p. The directors said that although reduced earnings for the full year were likely, the company had a relatively low and well-controlled overhead base and a strong balance sheet.

Compensation for loss of contract, amounting to £1.24m, net of corporation tax, was taken below the line as an extraordinary credit.

#### **Overheads** halve Davies to £0.52m

As foreshadowed in January's interim statement, full-year profits at D Y Davies, USM-quoted architectural practice, suffered from increased overheads due to delays on two major projects

in London.

In the 12 months to end-April, pre-tax profits halved to £517,000 (£1.04m), although turnover declined by a modest 8 per cent to £7.52m (£8.15m).

Earnings per 5p share dipped to 5.5p, against 12.7p last time, but the final dividend is held at 3p for a same-again total of 4p.

again total of 4p.

An extraordinary charge of £73,000 related to abortive acquisition costs.

### **Eglinton profits** iump to I£0.2m

Eglinton Exploration, formerly Eglinton Oil & Gas, a Dublin-based concern involved in oil and gas exploration and production, saw its pre-tax profits for the first half of 1988 leap from 1£19,000 to 1£233,000 (£197,000).

The result for this Third Market listed recourses com-

Market-listed resources com-pany was achieved on revenue up from £237,000 to £1.03m, with gross oil and gas sales increasing to £434,000 (£237,000). Earnings per 5p share worked through at 9.4p

Bristol Waterworks The offer for sale by tender of up to £1.846m of 4.9 per cent ordinary stock in Bristol Waterworks Company has been partially left with the underwriters. Just over £1.41m of stock has been alloted to the public and underwriters have taken

Seynour Pierre Butterfield, brokers to the lame, suggested that it had been affected by interest rate developments and the general market slide.

ಾರ್ ಪ್ರವರ್ಣಕ್ಕು ಅತ್ಯವಾಗಿ ಕನ್ನಡಿಸುವ ಮುಂದು ಪರ್ವಜನೆಯ ಮುಂದು ಮುಂದು ಮುಂದು ಮುಂದು ಮುಂದು ಪ್ರತಿ ಪ್ರವರ್ಷ ಮುಂದು ಮುಂದು ಮುಂದ

### Steel Burrill can see no dramatic profit pick-up

THE \$1.2bn (\$710m) Piper Alpha oil rig explesion has triggered a sharp rise in marine reinsurance premium rates which could benefit. Steel Burrill Jones Group, the Lloyd's reinsurance broker.

SBJ, a leading intermediary

for so-called London market,

excess of loss reinsurance (LMX), nevertheless warned against expecting a dramatic improvement in its results as itreported yesterday a 24 per-cent slide in its half year pre-tax profits to £1.64m.

The figures were still domi-nated by the adverse impact of

reinsurance rate cutting prior to Piper Alpha and the weak-ness in 1987-8 of the US dollar, the currency for most marine reinsurance luminess. In the six months to June 30, SBJ's turnover from broking pissions fell 9.4 per cent to 24.21m, while other income was up marginally at £1.07m. Profits after tax and minorities

were down 40 per cent at \$1.01mi. Karnings per share dropped \$3 per cent to 5.7p. The group said it still expected pre-tax profits for the full-year to be below the 1987 figure of \$4.48m. It is maintaining its interim dividend at 2.7p.

In spite of the prospects for a hardening of prices in the

In spine of the prospects for a hardening of prices in the marine reinsurance business. SBJ's comments about the impact of the North Sea disaster were relatively cantious. It said the upward movement in prices will not have any significant impact on its figures until 1989, even if the increases were maintained. increases were maintained. SBJ also has yet to benefit substantially from a diversification programme starting to gain pace since its acquisition this summer of Gravesend-based H. Stephenson, a non-marine insurance broker.

It said the reason for the likely delay in the full impact of Piper Alpha was that most

oil rig-related reinsurance poli-cies bought by London insur-ers will not come up for renewal until next year. SBJ's muted statement

reflected current uncertainty at Lloyd's about whether or. not the big premium rate rises over the last six weeks were a

hee-jerk reaction;
In the aftermath of the July
e explosion. SBJ's, brokers,
found that Lloyd's syndicates
which wanted to top up their
oil rig-related reinsurance coverage could face 200-300 per
cent price increases.

erage could lace 200-sto per cent price increases. However, London brokers say it is not guaranteed that reinsurers will be able to main-tain these prices. One reason is that the direct marine insurance market in London is unwilling to pay more for its reinsurance protection at a time when it was still facing stiff price competition for its own business from insurers

### CLF shows 45% midway rise

the money markst, and heer pected continued progress in the second half. Results included Technology

For Business, acquired a year ago, and Concept Leasing France, which joined the group

ume of new husiness in the UK leasing operations rose 92 per-cent to £51.7m and continued that strong growth.

Turnover in the first half

came to 238,06m (£23.89m). and those larger transactions Earnings were 7,98p (6.12p) and written on a floating rate basis.

THE EXPANDED vehicle and in March Compatisons for 1987—the interim dividend is A.730 equipment leasing group, CLP have been adjusted to reflect (0.58p). The chairman said the flowings, pushed up its pre-tax. TFB on a merger basis profit from £1.61m to £2.24m in Mr. Barnes said Concept the first half of 1988.

Mr. Tony Barnes, chairman, new business levels, while TFB expressed confidence in the also lifted profits but at a group in a strong position to future, despite the volatility of lower level than planned. Volexpand its leasing business in the UK.

Over half of current borrow. group in a strong position to expand its leasing business. Over half of current borrow-Over hair of current porture-ings were at fixed rates arranged through the awap market, augmented by the con-vertible at 8.33 per cent gross.

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A rates

### Suter sells Avdel stake option

By Nikki Tait

SHARES IN Avdel, the USM-quoted company formerly known as Newman industries, jumped 6½p to 64p yesterday on news that the US-based on news that the OS-Dasan Banner Industries had acquired an option over the 35m shares (27.56 per cent) built up by Suter, the indus-trial conglumerate run by Mr. David Abell.

Banner, which is quoted on the New York Stock Exchange, has paid £3.5m for the option to acquire the Suter holding at 70p a share. This would cost it \$24.5m, with the option exercisable any time until lanuary 15 1989: The option can also be extended to April 15 1383 for payment of another £1.75m. Suier said it was approached by Banner, and felt that the

offer was at a level it could not

Banner itself acquired a small interest of 250,000 in Avdel earlier this year, Transcontinental Services Group, a UK listed company in which Banner has a 47 per cent interest (with voting rights restricted to 29.9 per cent) and which in turn owns about 15. which in turn owns about 15 per cent of Banner, has alsoacquired Im shares. Together, the three interests would give Banner 28.54 per cent of Avdel.

Mr Jeffrey Steiner, chairman

The option interest is described as a "strategic investment", and an "opportunity to investigate areas of mutually beneficial co-operation" between the two companies. Banner, which supplies mechanical components and aircraft parts, has interests in speciality fasteners, particularly in the aerospace industry. Avdel also has an engineered tenings business.

Yesterday, however, Mr John Marley, Avdel's chief executive, said he regarded the two businesses as "very differ-ent in nature, serving differof Bamer, is currently travel-ling, in Eurone, and was unavailable for comment. How-ever, Henry Ansbacher, the company's adviser, said that Banner's intentions were "wholly friendly".

### Pernod rumours raise IDG 13p

THE BOARD of Pernod-Ricard. French drinks group, met vesterday to discuss irish Distillers Group, the whiskey group which is fighting a 12253m (£214.64m) hostile takeover bid

stake, it said a statement con-cerning IIIG would be made Mr. Richard Burrows, IDG either on Friday or Monday. managing director, yesterday

Speculation over a possible which is righting a 12233m (£214.64m) hostile takeover hid by Grand Metropolitan.

Pernod refused to comment on its intentions towards IDG hid, which has been referred to in which it has an undisclosed to the Irish Fair Trade Commis Huzzar brands.

managing director, yesterday attacked claims by GrandMet that, should its bid be successful, then job losses would be minimal. He said GrandMet planned to sell the Bushmills. Power's, Tullamore Dew and



#### PENTLAND INDUSTRIES PLC SUMMARY OF RESULTS FOR THE SIX MONTHS TO 30th JUNE 1988

Interim Dividend increased by 270% to 0.5p.

\* Pre-tax profits rose 12% to £38.5 million. \* Earnings per share rose 23% to 8.51p.

Shareholders' funds rose 23% to £182 million. 1988

t1987 £343.4m Turnover £208.4m £38.5m Pre-tax profits £34.3m £23.7m Post tax profits Earnings per share 8.51p. - 6.94p 0.5p Dividend per share 0.135p

Stephen Rubin, Chairman reports

"We are satisfied with the Group's current trading and, subject to circumstances outside our control, expect 1988 to be a year of further progress."

†Restated at exchange rates applicable at 31st December 1987.

Copies of the full Interim Statement are available from: The Secretary, Pentland Industries pic, The Pentland Centre, Lakeside, Finchley London N3 2QL

The state of the s

#### CITICORP OMORTGAGE SECURITIES, INC. REMIC Pass-Through Certificates, Series 1987-13

FT INVOICES RECORMAND LTD. RESISTENCE OFFICE, BRACKEN HOUSE, NO CANNON STREET, LONDON FLAP ARY.

US\$57,057,000 Initial Stated Amount of Class A-1 Citicertificates

For the period 1st September, 1988 to 1st December, 1988 the Class A-1 Citicertificates will carry an interest rate of 9.4375% per annum with an Interest amount of US\$22.68 per US\$1,000 (the Initial Stated Amount of an individual Citicertificate) payable on 1st December, 1988. The Stated Amount of the Citicertificates outstanding will be 96.13885088% of the Initial Stated Amount of the Citicertificates, or US\$961.39 per individual

Citicertificate until 1st December, 1988. Security Pacific National Bank, London 1st September 1988

Agent Bank

Ordinary ... All-Share

### CURRENCIES, MONEY AND CAPITAL MARKETS

#### FOREIGN EXCHANGES

# Rate differentials hit yen

New York close, to Y134.95 at the finish of trading yesterday in Tokyo, and to Y136.50 at last night's London close, com-

night's London close, compared with Y134.40 on Tuesday.

The D-Mark also moved steadily higher against the yen, closing at ¥72.70 last night in London, compared with 72.20 in Tokyo, and 72.00 on Tuesday in London.

At the London close the dollar had advanced to DMI 2775

lar had advanced to DML8775 from DML8665; to SFr1.5850 from SFr1.5760; and to FFr6.3775 from FFr6.3250

On Bank of Rigland figures, the dollar's exchange rate index rose to 100.2 from 99.6.

Sterling was volatile, within a narrow range, with London's

financial market's keeping a

close watch on the currency.

The pound opened weaker in
London, against a firm dollar,

but was slightly stronger

A WEAKER yen was the main the D Mark. The US currency feature in a foreign exchange rose from Y134.85 at Tuesday's market lacking major eco-nomic news yesterday. The dol-lar's undertone was firm, with

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He said that

n "strategic

Europe doing little more than continuing a trend seen on Tuesday in New York and then in the Far Bast.

The yen weakened initially against the US currency on a news report that the Japanese Minuse M Finance Ministry Intends to set a tax of 26 p.c. on certain stock exchange transactions. Buf dealers said there was nothing new in this suggestion, and it was really just an excist to buy the dollar.

The yen also looks vulnerable to speculative colling.

ble to speculative selling because of relatively low Japa-nese interest rates, according

to dealers.
This factor was reinforced when The Bank of Japan said tregards recent moves in the yen as not significant, and that there are no plans to raise its 2.5 p.c. discount rate.

Last week's rise in European interest rates has belond to

take upward pressure off the dollar, and if anything has made a rise in Japanese rates less likely. There is little reason domestically for Japan to raise rates, against a back-ground of healthy economic growth without any inflationary problems. This boosted the dollar and

£ IN:N	EW.	YURK	i	4 10 7		
Aug.31.	, L	kat .		Previous Close		
£ Spot	1602	-1.6490 -0.52pm -1.51pm -4.48pm	1.66 0 1 4	75-1:6805 56-0:55pa 46-1:44pa 34-4,29pa		
Formand presidents and disposess apply to the US dollar STERLING INDEX						
		Áq.	31	Previous		
P 20		75		25.7		

**CURRENCY RATES** 

	خ خند	<u>-</u>	
Aug.33.	略%	Special* Drawing Rights	European Catronacy Unit
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Series Franc Greek Drack,	20 h	2.04046 195.538 0.963802	1.75194 167.598 8.775152

"All SDR rates are far Aug. 30 **CURRENCY MOVEMENTS** 

Aug.31	Back of A. Sandara	Morget** Changes %
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Asstralia 2,0900 - 2,0930 1,2440 - 1,2450 Park 485.05 - 467.75 288.55 - 267.45 Park 5 - 253.00 - 27.30 150.35 - 152.65
Fintand 7.4760 - 7.6990 4.4530 - 4.4570 Greete 253.00 - 257.30 150.35 - 152.85
Hong Keeg _ 13,1080-13,1245   7,8035-7,8055
KernetSub 1213.15 - 1222.90 719.10 - 774.90 Kernets 0.48010 - 6.48060 0.29570 - 0.29580
imembers 66.20-66.30 39.30-39.40 Malaysia 4.4865-4.4975 2.6710-2.6780
Mertin 3834.35-3855.15   2281.00-2292.00   N. Zeshan 2   2,7315-2,7365   1,6265-1,6285   Shall &r   4,3025-6,3085   3,7505-3,7515
Singapore 3.4310 - 3.4365 - 2.0430 - 2.0450 S. 8 60m 4.1000 - 4.1105 - 2.4470 - 2.4485
S. Af (Fe) 5.9515 - 6.0595 3.5395 - 3.6035
Selline rate

MONEY MARKETS

UK rates steady

INTEREST RATES in London were little changed on the last day of the month. Some activity was seen in the three and six month interbank, which saw rates edge up a sixteenth of a point on roll-over activity, but there was nothing in the way of fresh economic news to influence trading.

Three-month interbank finished at 12%-12% p.c. from 12%-12% p.c. Overnight money touched a high of 13% p.c. soon after lunch but finished nearer

II p.c. The Bank of England forecast a shortage of around £800m, with factors affecting the market including repay-UK steering book been tending role 12 per cent front August 25 & 25

ment of late assistance and ment of late assistance and bills maturing in official hands together with a take up of Treasury bills draining 2559m, and a rise in the note circulation of £25m. In addi-

acing major Deposits

Let payments.

sand 2198m of eligible bank

sant 215cm to engine bank bills, all at 11½ p.c.

A further revision took the forecast back to a shortage of £800m. The authorities pro-vided additional assistance in the afternoon of £194m through the afternoon of £194m through purchases in band 1 of £23m of local authority hills, and £77m of eligible bank bills at 11% p.c., and in band 2 £8m of eligible bank bills at 11% p.c. Band 4 purchases comprised £86m of eligible bank bills at 11% p.c. Late help came to £365m, making a total of £790m.

Interest rates in Frankfurt showed a mixed response to the Bundesbank's latest sale and repurchase tender. The Bank invited offers for 28-day funds at a fixed rate of 4.25 p.c. and also introduced a variable rate tender over two months. Under the new system of varibanks will pay for allocations at whatever rate they bid, as opposed to a blanket minimum accepted rate.

circulation of £25m. In addition, banks brought forward balances £145m below target. These were partly offset by Exchequer transactions which added £45m.

The Bank revised its forecast to a shortage of around £750m, and gave assistance in the morning of £231m. This comprised outright purchases of £32m of slightle bank bills in band 1 at 11% p.c., and in band 4, film of local authority bill-The total allocated will be

week.

It has already been suggested that bank and building society lending (M4) in August may exceed July's fig-ure of 19hn, and that the trade balance is unlikely to show any dramatic improvement.
The pound fell 65 points to \$1.6840, but rose to DM2.1625 form DM3.1550; to Y229.75 from

against the D-Mark. As sterling

weakened later in the morning

gilts and equities began to

slide. Interest rates were slightly firmer where changed, against a background of con-

tinued nervousness about

Y227.25; to SFr2.67 from SFr2.6650. Sterling's exchange rate index closed unchanged at 75.8.

EMS EUROPEAN CURRENCY UNIT RATES							
	Em cettral rates	Carrency amounts against Ecu Ang.31	% charge from central rate	% change adjusted for divergence	Divergence Smil %		
leigian Franc Inelsh Krone Inelsh Krone Ingan D-Harit Ingan Franc Ingan Gellde Ingan Gellde Ingan Gellde	42.4582 7.88212 2.95853 4.99403 2.31.965 8.768411 1483.58	43.5277 7.97958 2.07557 7.04349 2.34348 8.775251 1540,76	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	+1.08 +0.06 +0.53 +0.53 +0.45 +0.45 +0.45 +0.45	±1.5344 ±1.5404 ±1.0981 ±1.5072 ±1.6604 ±4.0752		
hanges are for Ecc. ti djustment calculated	erefore positive of by Flatestal Time		esk comecy		·		

		FORWAR	D 4041	er :	THE BOLL	
Aug 31	Day's	Clear	One month	% p.a	Three months	. 22.
sada heriands . lgium reark and Germany	1.6775-1.6905 2.0795-2.0885 3.584-3.571 65.95-66.30 12.10-12.15 1.1765-1.1820 3.15-3.163	1.6835 - 1.6845 2.0870 - 2.0880 1.563 - 3.573 66.20 - 66.30 12.14 - 12.15 1.1780 - 1.1790 3.16 - 3.163	4.53-0.52cpm 0.43-0.35cpm 21-20cpm 32-27cpm 42-33-00cpm 0.47-0.42cpm 2-13-00cpm	3.74 2.27 6.93 5.34 4.08 4.53 7.35	1.53-1.48pm 1.11-0.97pm 53-53-53pm 86-77pm 124-114pm 1.30-1.20pm 54-53-pm	357 199 651 492 387 424 7,04
1092i 	10.001	258.35 - 259.35 208.55 - 209.00 2349 - 2350 11.654 - 11.664 10.734 - 10.944 10.904 - 10.914	3.80-1.906repa 1-4.0refs 11-11-con 2-11-orem	146 0.58 147 192	8.30-4.20pm 2'4-3'46's 37-3'4,pm 51-4'4 pm	1.06 -0.92 1.23 1.90
tria Itzeriaed glass este i	2294 - 2304 -22 15 - 22 25 2 66 - 2 674 scorrettible francs. F	2294 - 2304 22.20 - 22.25 2.664 - 2.674 Tanachal franc 67.30	1½-1½m 2-1½m 57.40 . Sis-mach	7.51 8,71 forward do	5½-5½pm (lar 2.58-2.53qm	7.07 8.15

DOLLAR SPOT- FORWARD AGAINST THE DOLLAR 153-1-80m 0.40-0.50k 0.49-0.53k 1.54-1.52m 1.54-1.52m 1.57-1.52m 1.57-1.52m 1.57-1.52m 1.50-1.60k 8.00-10.00k 7.85-8.056 0.05-1.50m 1.59-2.00k 1.23-1.20m 1.59-2.50m 1.59-2.50m 

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Comments 🗖	URO-CL	PRENC	Y INT	REST-	RATES	
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Line   term   Enrodelines   two pairs   V <sub>2</sub> -V <sub>4</sub> per cent; three pairs   V <sub>4</sub> -V <sub>4</sub> per cent; then years   10-V <sub>4</sub> per per cent   10-V <sub>4</sub> per	•	-		677	<u> </u>	12-012	940	•	4-74	, ,,,,	<u>'l</u>		Close High	
### CHANGE CROSS REFIES    Previous day's open int. 6011 (7043)	:	Long to	re Eurodo 9% per ces	ilars: (44) Lacunical	years 91 <sub>2</sub> . Short ser	91, per ce	ut; three ye çalil for U	ers 97,-9 S Dollars	is per ceix; and Japan	four year se Yes; oli	10-63° ta	er cent; five and notice.	Dec 85-12 85-24	
Aug.31   E   S   DM   Yes   F Fc   S Fr   M F1   Lira   C S   B Fr	•	<u> </u>										` .		
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Aug.31 E 3 DM - Yes FF: S Fr. N FI. Lira C 3 B Fr.  5 1 1464 3.163 229.8 10.740 2470 3570 2249. 2.088 46.25 5 0.594 1 1467 136.5 5.376 158- 2.120 139.5 1.240 39.34  BN 0.316 0.537 1 126.5 3.796 0.647 11.52 135.5 1.240 39.34  UNI 0.316 0.537 1 126.5 1.376 126.5 1.396 0.647 11.52 135.5 1022 2.086 28.3  FF: 0.931 1.568 2.945 214.0 10. 2.406 1.337 579.8 0.782 24.81  N FI. 0.280 0.477 0.886 64.37 1.006 0.748 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-	1 : 1	7							- :				_
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# Fi	•		0.31 <i>6</i> 4.352	0.532 7.328	13.76	72.65 1000								
The 0.426 0.777 1.347 9728 4.572 1.157 1.520 1000. 0.889 25.25 1.6840 1.6787 1.6689 1.6  C.S. 0.479 0.897 1.515 110.1 5.144 1.279 1.710 1125 1 31.73  B.F. 1.509 2.542 4.774 346.9 16.22 4.030 5.389 3546 3.152 100. (atest High	•	F.Fr. S.Fr.	0.931 0.375	1.568 0.631	296 1185	214.6 86.07		2.485 1	3.324 1.337	2187 879.8	1.944 0.782	61.69 34.81	POUND-S (FOREIGN EXCHANGE)	_
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			0.479	0 907	1 414	310)	-5344	1279	1730	1125	1	31.73	PANA-STERLING St per 5	
				2.542	4.774	346.9		4.030	5.389	3546	3.152	700.		م

Yea per 1,000: French Fr. per 10: Lica per 1,000: Belgian Fr. per 100. FT LONDON INTERBANK FIXING (11.00 a.m. Aug. 31) 3 months US delians 6 sonths US Dollars

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	. 1	IONE	/ RAT	'ES		·
NEW YORK			Treasury	Bills and	Bonds	
(Lunchtime) Prime rate Broker loan rate Fed funds at intervention		ine month ino storth itx month ine year ino year		7.00 Foors 7.54 Fixey 7.90 Seren	)(8) (8) 75 2	8.83 8.91 8.99 9.15 9.26
Ang 33	Overnight	Gee Month	Two Months	Three Months	Six Months	Lamberd Intervention
Frankfurt Paris Zurich Amsterdien Tokyo Millian Brissells Cuddla	3.75-4.25 75-75 15-15 54-55 3.9575 10-105 7-15 7-74	5,00-5.15 71-71-73 34-34 551-58 421875 101-11 71-71-71	515-525 71-72 71-72	525.40 78-51 35-51 52-51 103-113- 71-71-71-71-81	5.55-5.70 84-84 83-84	5.00 6.75 -

Aug. 31	Decaight	· 7 days	NEY		5	
Interbask Offer	Oversight			l Three	Slx	One
leterbank Bid Sterling CDs.		terlice	One Month	Months	Mooths	Year
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Local Authority Deps Local Authority Bonds	12	117	12		124	퍨
Dicement Mist Danc	12	22%	112	115	-	
Company Deposits Finance House Deposits Tressury Bills (Bay)		=	影	128	12%	먎
Bank Brits (Burd)	- 1	•	謨	112	115	=
Dollar CDs		-	8.40 8.35	835.630	8.90 8.85	9.15-9.10
Fisher State		-	撑	73	711	. 4
ECU Linker Dep Bid	. 1	` -	1 52	5%	1 <b>5</b> 5	. 発

Treatury Bills (pail); one-month 11½ per cent; three months 11½ per cent; Bank Bills (self); one-month 11½ per cent; three months 11½ per cent; Treatury Bills; Average tender rate of efficiount 11.4865 p.c. CCDD Fixed Rate Sterling Export Figures. Make up day July 29, 1988. Agreed rates for period August 24,1988 to September 25, 1988, Scheme; 11.49 p.c. Schemes II & III: 21.86 p.c. Reference rate for period July 1.1988 to July 29, 1988, Scheme IV&V: 19.511 p.c. Local Authority and Finance Houses seven days notice, others seven days fixed. Fisance Houses Saue Rate: 10 from August 1, 1988; Bank Deposh Rates for same at seven days natice 3.75 per cent. Certificates of Tax Deposh (Series b): Deposh 17.0,000 and over held suder over month 7½ per cent; one-three months 9 per cent; three-fix months 9 per cent; sin-three months 9½ per cent; three-fix months 9 per cent, first July 5,1988 Deposits withdraws for cent 5 per cent.

**FINANCIAL FUTURES** 

### **US** bond prices firmer

marked up in Liffe trading yes-terday, underpinned by a stronger dollar - notably against the Japanese yen.

Values were boosted after reports that the Bank of Japan

UK long gilt futures were

Britain's trade position.

There was no fresh news to move sterling, and the pound finished firmer on the day against the D-Mark and yen, but the currency remains vulhad no plans to increase its discount rate. Most major European banks increased their key lending rates last

Sep Oct. Now Dec 27.85 7.82 8.10 8.34 5.24 5.74 6.18 6.57 3.15 3.99 4.57 5.17 1.63 2.29 3.25 3.89 1.17 1.68 2.24 2.88 1.07 0.19 0.53 1.01 1.55 8.07\$ 0.19 0.53 1.01 1.55 8.07\$ 0.00 not care Calls 504.29 p.05

LIFFE LONG GELT FUYTHER OPTIONS

Estimated volume total, Calls O Pots O Presions day's open lat, Calls 752 Pats 1767

LIFFE £/5 0P?2005 E25,000 (corts per £11)

LONDON (LIFFE)

Estimated Volume 2754 (2460) Previous day's open let., 11782 (11094)

Close High Low Pres. 1.6777 1.6742 1.6742 1.6845 1.6632 1.6643 1.6643 1.6735 1.6547 1.6642

1-mth. 3-mth. 6-mth. 12-mth. 1.6787 1.6689 1.6584 1.6400

the September contract was barely over the 10,000 level, as

generally lower, reflecting ster-ling's underlying weakness. The softer tone in the Septem-ber price was exaggerated by a switch into the December con-

Three-month sterling deposits acted in much the same way. An early premium in the September price over the cash equivalent was gradually eroded, as short term investors saw little point in taking bull positions at the moment. The December price drifted away from an opening level of 87.96, the same as Tuesday's close,

0ct 0.66 1.09 1.89 3.02 4.43 6.22 8.25 Dec 2.08 2.81 3.75 5.02 6.51 8.17 9.91 LIFFE US TREASURY MAIN FUTURES APTIBLES LIFFE FT-SE THIFTY FUTNISHES BYTISHS Estimated volume total, Calls 131 Puts 98 Previous day's open int. Calls 2453 Pats 1473

CHICAGO JAPANESE YEN CHIK Y12.5m \$ per Y100 Latest Nigh Low Pres. 0.7333 0.7349 0.7328 0.7430 0.7377 0.7411 0.7370 0.7450 0.7457 0.7457 0.7457 0.7547 0.7610 0.7610 0.7610 0.7624

STANDARD & POORS 500 DOREX SSOR there, before

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A 26 90 5.80 5 4 1.50 5.70 11.70 7.20 7.20 3.20 TOTAL VOLUME IN CONTRACTS: 17,712

EUROPEAN OPTIONS EXCHANGE

**BASE LENDING RATES** Adam & Company

Adam & Company

AAB - Affied Arab Bk

Affied Irish Bank

Henry Ansbacher

ANZ Banking Group Comm. B.C. II. Cass
Co-operative Baok
Courts & Co
Cyprus Popelar Bt
Dundar Baok PLC
Dundar Lawre
Equatorial Bank plc
Exeter Trost Ltd
Financial & Gen. Bank
First Mainmai Bank PL
Sees Mainmai Bank PL Provincial Bank PLC ...... R. Raphael & Sons ......

B = Bid

C ~ Call

Bank of Cyprus ...... Bank of Ireland ...... Bank of India ....... Bank of Scotland .... Hill Same!
C. Hoare & Co.
Hongkorg & Stasoph
Leopold Joseph & Sons
Lloyds Bank
Meghraj Bank Lid
Midland Baok
Meghra Bank Com Brit Bk of Mid East .... Brown Shipley
Business liftge Tst.
CL Bank Nederland
Central Capital

Charterbosse Bank

Charterbosse Bank

Roxburghe G rantee ..... Royal Bk of Scotland .... Royal Trust Bank . Smith & Willman Sers. Western Trust .... Westpac Bank Corp..... Whiteaway Laidlaw Yorkshire Bank

Memoers of Eritin sercham Banking & Settrities Houses Association. 7 day deposits 4.38% Savewise 7.16% Top Tier-£10,000+instant access 9.0% & Mortgage base rate. § Descand deposit 7%. Mortgage 11.375% - 11.75%

September 1, 1988

New Issue



**Maxwell Communication Corporation plc** Oxford, England

> ECU 75,000,000 83% Bearer Bonds of 1988/1993

> > **Issue Price** 100%%

Bayerische Vereinsbank Aktiengesellschaft

Crédit Lyonnais

Banque Bruxelles Lambert S.A.

Dresdner Bank

Istituto Bancario San Paolo di Torino

Kredietbank International Group

Arab Banking Corporation - Bankers Trust International Generale Bank Daus & Co. GmbH

Goldman Sachs International Corp.

The Long-Term Credit Bank of Japan (Europe) S.A.

New Japan Securities Europe The Nikko Securities Co., Swiss Volksbank (Europe) Ltd.

Vereins- und Westbank

Wirtschafts- und Privatbank

This announcement appears as a matter of record only. The Bonds have not been registered for offer or sale in the United States of America and may not be offered or sold in the United States of America or to nationals or residents thereof or to other U.S. persons.

### FT UNIT TRUST INFORMATION SERVICE

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UNIT TRUSTS	BU 9900997 JR3 20.09 3024 34.321-0.1 (L.28
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- 1 Press a switch and get thin!
- (6) 4 Close by a mean sort of
- bome (8)
  9 Deplore appearance of diminutive river bird (8)
  10 Charitable urges one's found moving (8)
- 12 Study a good man a hard worker, and so dependable
- worker, and so dependable
  (8)

  13 A word of thanks taking in
  a female divinity (6)

  15 There's nothing about "A"
  at the end of the index (4)

  16 Respecting a black holding
  on, as is quite right (10)

  19 Fighting men men are
  this unruly (3,7)

  20 Fancy a little hideaway (4)

  23 Key-rings for guides (6)

  25 Like speaking, though it's
  testing (8)

  27 Expulsion for getting into
  vice maybe (6)

- 27 Expulsion for getting into vice maybe (8)
  28 Short story about abstemious sovereign (6)
  29 On the carpet? No, quite the reverse! (8)
  30 Turning evil, trap game (6)
  DOWN

- 1 Arab or oriental coppers holding a vehicle up (7) 2 Regent in a newly created country (9)
- 3 Keep quiet about warm covering (6)
  5 A person exercising inside because rain is forecast (4)

- 6 Scots crying for some form of recognition (8)
  7 There's nothing big in the French male, so relax (5)
  8 Carry on about a way loss can be made (7)

Solution to Puzzle No.6,721 PUNCER ABORTIVE
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8 Carry on about a way loss can be made (7)
11 In a woman it appears to succeed (7)
14 Parsees dealt with abuse (7)
17 Game graduate fellow about to make a lot of money (9)
18 Left Her Majesty without anything for amusement (8)
19 Picture furniture embellished with gold (7)

lished with gold (7)
21 Fisherman need to get right

into corners (7)
22 Ironic humour at being received by father (6)
24 One struggled when draped in green stuff (5)
26 She'll be firm over gummen (4)

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#### GUIDE TO UNIT TRUST PRICING

FT UNIT TRUST INFORMATION SERVICE

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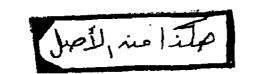
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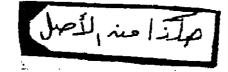


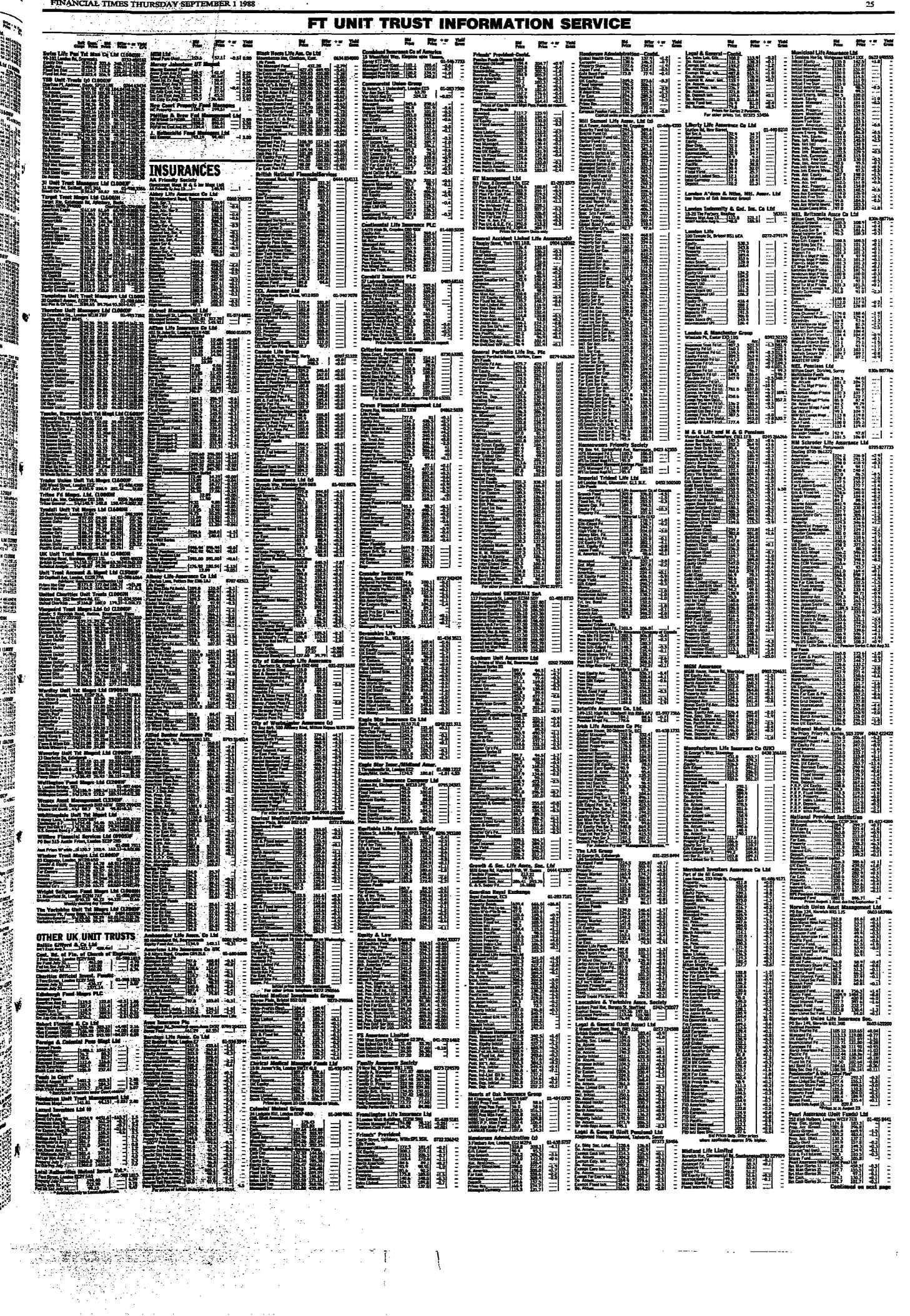
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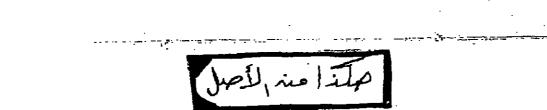




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1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | 1975 | | Pension Cach. | 275.6 | 284.14 | 40.21 | Pension Each | 275.6 | 284.14 | 275.6 | 284.14 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 | 285.6 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Provident Life Assau List Provident Way, Endispinate REZI Cartie Fed. | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 147.5 | 97.7 96.3 100.2 97.3 100.8 101.4 99.4 96.1

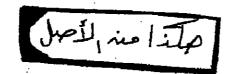


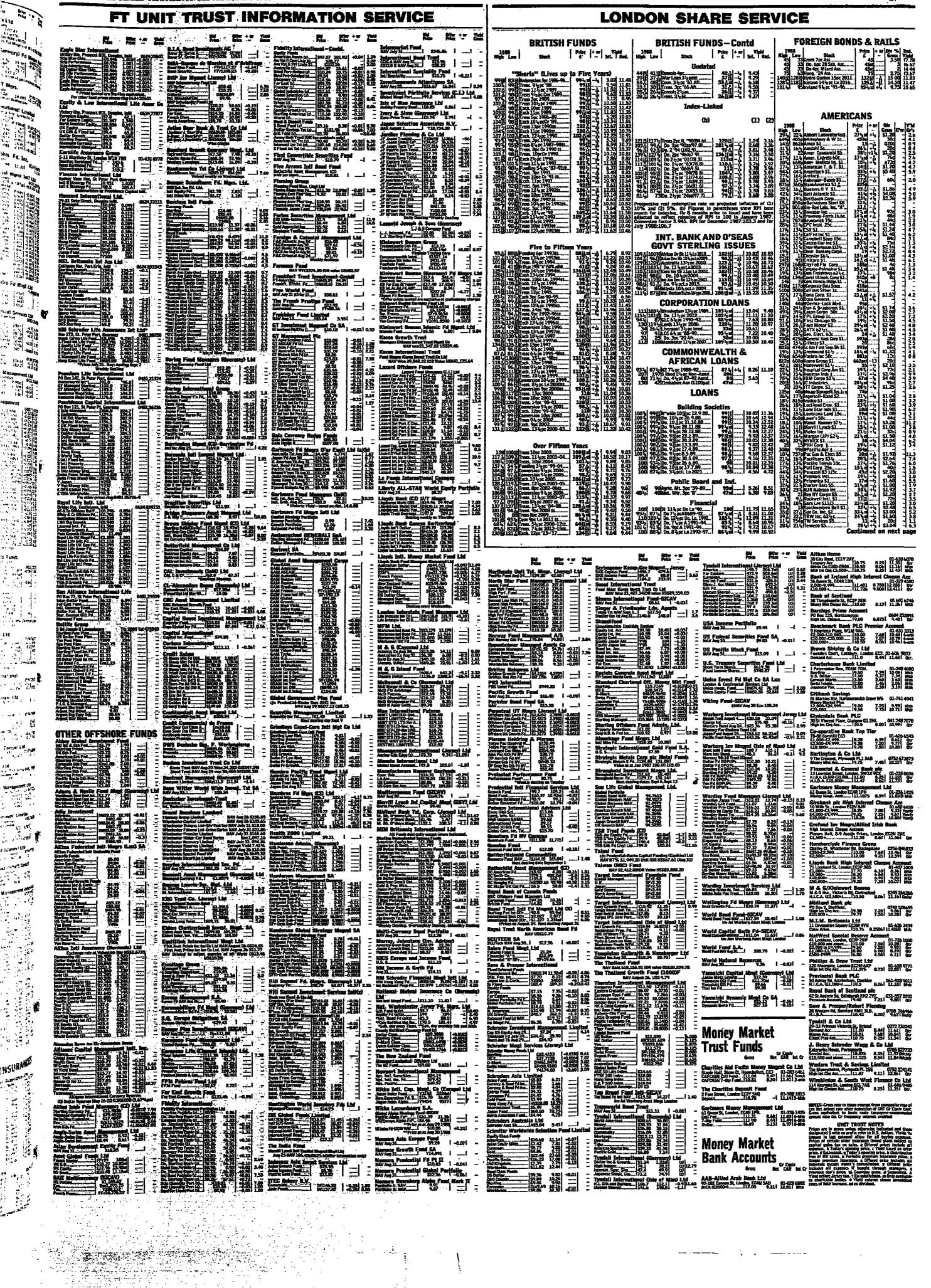
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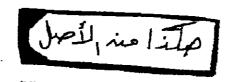




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	LONDON SHARE SERVICE	
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77 47Bisiness Mort 19, v 59, -1 25, -8, 6, -7 51Bisiness Mort 19, v 59, -1 25, -8, 6, -7 51Bisiness Mort 19, v 59, -1 10, -8, 6, -7 51Bisiness Mort 19, v 59, -1 10, -8, -7 51Bisiness Mort 19, v 59, -1 10, -8, -7 51Bisiness Mort 19, v 59, -1 10, -8, -7 51Bisiness Mort 19, v 59, -1 10, -8, -7 51Bisiness Mort 19, v 59, -1 10, -8, -7 51Bisiness Mort 19, v 59, -1 10, -8, -7 51Bisiness Mort 19, v 59, -1 10, -8, -7 51Bisiness Mort 19, v 59, -1 10, -8, -7 51Bisiness Mort 19, v 59, -1 10, -8, -7 51Bisiness Mort 19, v 59, -7 51Bisiness Mort 1	Color   Colo	According   Acco
111   75   Rea Bros.   76   11   11.75   115   117   115   117   115   117   115   117   115   117   115   117   115   117   117   115   117	314 223 Microsyntes 10p_v	63 38Elga Gross 50
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175   12786adington	7.1 38 Prestrate: 55 v 61r -1 31.56 5.1 12.1 17.8 12.3 11.6 15 Prestrate: 55 v 61r -1 31.6 5 Prestrate: 55 v 61r -1 31.6 5 Prestrate: 55 v 61r -1 31.6 12.2 31.6 12.	102 Ba57;scholassiff   118 41 575 Set   77   325 Set   77   325 Set   37   325 Set   325
BUILDING, TIMBER, ROADS  76 Soldent S. R. J. 10	154   125   151   151   152   153   154   155	58 38 feet Hides 100 v 51
258 107   Serveron   9   258   4   3.0   8.8   1.2   3.6   3.1   3.8   3.2   3.0   3.8   1.1   3.6   3.1   3.8   3.2   3.0   3	188   91AT 50.01   137   141   127   275	158 1244 op Group 2n. v 143 - 2 3.9 64 3.6 16.0 177 132 relevant 10n. v 143 - 2 1.5 4.8 2.6 16.0 177 132 relevant 10n. v 143 - 2 1.5 4.8 2.6 16.0 178 150 relevant 10n. v 143 - 2 1.5 4.8 2.6 16.0 178 178 178 178 178 178 178 178 178 178
215 101F albritar 10p v 171	192   192   193   194   195	145   99 stebuls & Case 1809  93   32 2.4 4 6 12.1

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FINANCIAL TIMES THURSDAY SEPTEMBER 1-1988	LONDON SHARE SERVICE	29
LEISURE—Contil.  PAPER, PRINTING, ADVERTISING—Contil  PROPERTY  PR	TRUSTS, FINANCE, LAND  TOBACCOS  TRUSTS, FINANCE, LAND  TRUSTS, FINANCE, L	County   Dec   D
12   12   12   13   14   15   15   15   15   15   15   15	13   10   10   10   10   10   10   10	August   A

#### FT-ACTUARIES SHARE INDICES

These indices are the joint compilation of the Financial Times, the institute of Actuaries and the Faculty of Actuaries

	EQUITY GROUPS	١	N edines	day Ar	Toe Aug 30	Fri Aug 26	Tho Aug 25	Year ago (approx)			
Fì	& SUB-SECTIONS gures in parentheses show number of stocks per section	Index No.	Day's Change	Est. Earnings Yield% (Max.)	Gross Dh. Yield% (Act at (25%)	Est. P/E Ratio (Net)	ns adj. 1988 to date	Index No.	Index No.	index No.	inda No
1	CAPITAL GOODS (210)	759.34	+0.2	10.67	4.22	13.62	17.16	757.54	771.61	782.56	948
ž		961.66	+1.0	11.90	4.43	10.32	21.41				1190
3	Contracting Construction (37)	1509.33	+0.3	11,11	- 3.57	11.74	27.59				
4	Electricals (12)	2081.72	+0.5	9,80	4.83	13.67	49.65	2070.37	2095.48	2107.80	2452
5	Electronics (31)	1660.58		18.43	3.64	12.32	40.30	1668.83	1678.44	1688.57	1992
6	Mechanical Englneering (57)	j 401.15	+8.4	10.28	4.35	12.06	9.23	399.68	498.07	412.82	517
8	Metals and Metal Forming (7)	450.58	-0.5	10.47	4.21	11.82	7.95	452.92	465.52	474.91	563.
9		264.48	+8.2	12,30	4.98	9.38	6.62	263.89	270.74		382
0		1239.93	-8.4	9.48	4.62	12,62	28.49	1244.51	1266.88	1282.98	1629
3		1 <i>0</i> 35.22	-0.1	9.55	3.83	13.24	19.26				
2	Brewers and Distillers (21)	1071.55	+0.2	16.90	3.88	11.56	20.84		1083.01	1093.46	1156
5	Food Manufacturing (21)Food Retailing (16)	935.34		9.27	3.96	13.80	17.95	935.77	946.22	950.31	1902
6	Food Retailing (16)	1897.09	-8.5	9.12	3.51	14.47	38.49			1930.77	2400
7	Health and Household (12)	1778.84	+0.1	7.81	2.75	16.57	18.01				2474
9	Leisure (30)	1293.16	+0.2	9.56	3.95	13.41	28.32				1360
1	Packaging & Paper (17) Publishing & Printing (18)	488.74	+0.1	10.66	4.17	12.75	9.98	488.03	599.15	512.06	675
Z	Publishing & Printing (18)	3326.19	+0.5	8,59	4.60	14.62	73.53			3444.45	4586
4	Stores (34)	745.26	-0.9	11.14	4.44	11.80	15.08	752.38	769.66	786.31	1856
5	Textiles (16)	548.61	+9.5	12.60	4.98	9.31	12.65		562.01	566.86	805
	OTHER GROUPS (93)			11.51	4.55	19.62	19.92	864.97	871.85	875.14	
1	Agencies (19)	1005.0Z		8.59	2.58	34.71	18.11	1055.65	1062.74	1667.93	1686
2	Chemicals (21)	1651-21	49.2	12.50	4.97	9.60	35.79	1019.25		1023,73	
13	Conglomerates (13)	1104-27	+0.6	18.94	4.63	10.55	22,91			1384.29	
15	Shipping and Transport (12)	1854.07	-0.3	11.63	4.85	11.39	34.38		1880.27	1899.97	2245
7			-8.2	12.09	4.85	10.73	20.38	920.72	925.97	931.22	106
		1195.75	*****	11.45	4.32	9.98	24.64	1196.46	1202.34	1201.48	1640
	INDUSTRIAL GROUP (488)	929.12	PERMINA	10.39	4.14	11.98	19.41	928.92	941.80	958.61	1173
		1703.95	-8.2	11.09	6.34	11.58	64.62	1707 <u>.</u> 33	1717.99	1722.98	222
9	500 SHARE INDEX (500)	994.95	1	10.48	4.44	11.92	23.20	995.03	1907.78	1016.31	1267
1	FINANCIAL GROUP (122)	667.58	+0.2		5.23	-	18.46	665,93	670.52	674.62	812
9	Banks (8)	449.73	+0.2	22.38	6.82	5.99	25.83	639.21	637.92	642.07	802
5	Insurance (Life) (8) Insurance (Composite) (7)	996.88	-0.7		5.05	_	24.97	1003.75	1818.77	1014.17	
6	Insurance (Composite) (7)	520.47	-0.2	- }	5.94	- 1	15.67	521.70	526.38	525,78	617
7	Insurance (Brokers) (7)	941.75	+8.7	18.23	6.76	12.63	31.74	935.14	951.90	956.94	1246
8	Merchant Banks (11)	335.57	+0.1		4.27		7.68	335.28	341.09	344.76	491
9	Property (51)	1153.97	+1.2	5.50	2.81	23.29	15.18	1140.42	1152.59	1165.79	1244
0	Other Financial (30)	360.46	-0.1	10.86	5.41	11.57	9.54	360.76	363.96	365.80	553
ī	Investment Trusts (78)	885.31	-0.1		3.18		13,49	886.27	894.65	990.18	1127
	Mining Finance (2)		-12	9.36	3.67	12.08	8.32	518.03	521.99	522.73	153
ī	Overseas Traders (8)	1135.50	+8.1	10.14	4.92	11.59	35.31	1134.69	1145.86	1148.78	
	ALL-SHARE INDEX (710)	911.17			4.52	-	21.56	911.07	921.68	928.91	
Ⅎ		lader	Day's	Day's	Day's	Apq	PUA	Apq	Aug	Apq	Ye
ı		Ho.	Change	High	Low I	30	25	25	24	23	29
7	FT-SE 100 SHARE INDEX &		-1.2					1780.2			

<del></del>	FD	ŒD I	NTE	RES1	<u></u>		AVERAGE GROSS REDEMPTION YIELDS Aug Aug agg 31 30 (appn
	PRICE INDICES	Wed Aug 31	Day's change %	Tue Aug 30	xd adj. Loday	xd adj. 1988 to date	1   1   10   10.12   10.09   9.   2   Compons   15 years   9.70   9.69   9.
2 3 4	5-15 years Over 15 years irredeemables,	118.79 133.60 144.69	-0.02 -0.18 -0.54	118.86 133.63 144.87 163.34		7.89 9.34 8.78 8.49 8.82	6 25 years 9.63 9.61 9. 7 High 5 years 10.64 10.61 10. 8 Coupons 15 years 10.07 10.06 10. 9 25 years 9.62 9.61 9.
6	Index-Linkel 5 years Over 5 years		-0.06 -0.08	126.35 120.31 120.63		1.81	Inflation rate 5%   5yrs.   3.32   3.28   3.   12   Inflation rate 5%   0ver 5 yrs.   3.89   3.88   3.   13   Inflation rate 10%   5yrs.   2.24   2.21   3.   14   Inflation rate 10%   0ver 5 yrs.   3.72   3.71   3.
_	Beheniures & Lazas Preference	116.04 90.20		116.53 90.16	<u>-</u>	7.11 3.61	-117   25 war   11.12   11.07   11.

ACCEPTING LONG THE PARTY OF THE

rises and falls	YEST1	ERDAY	
British Funds Corporations, Dominion and Foreign Bonds Industrials Financial and Properties Olis Plantations Mines Others	Rises 6 3 389 163 27 1 21 86	Falls 95 14 372 117 17 23 73 64	Same 12 35 837 382 62 9 100 113
Totals	696	755	1,550

LONDON	RECENT	ISSUES
<del> </del>		

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85551 830 - 4888X	FP. FP. FP. FP. FP. FP. FP. FP. FP. FP.	16/9 22/8 26/8 25/8 21/7 5/8 19/8	いる高温を含みない。	*8%FNSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	Carticle Group 2p Outcerdinates 100 Expression 100 Expression 10p	240	21 4424 4	135 1013 1219 575 120 498 135 439 130	22325	31 96 20 45	33.2 15.2 15.0 19.4 13.2 18.1

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_		Date	High	Les.	}	£	l
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0.9 20		29/9	993, p 100 100 20npa	96½p 98¾ 99¾	McCarthy & Siese 8,75pc Rd. Pf. 2003 N'wide Asg. 11 Lac 7,8,89	2014 2014 2014 2014 2014 2014	
•		-	1049	95	RIT Capital Plans 21 <sub>2</sub> pc Cr Uns La 2000 Famans 81 <sub>2</sub> pc Cr. Rd. Pf. 2003	200p	ľ

			Ri	юнт:	B OFFERS		٠.
	Acrount Paid	Latest. Remand	19	188	Surt	Clasing Price	+ or
•	4	Date	High	Low	3000	P	-
5	JSTN Mill	7/29	27pm 45pm	16pm 40pm	Amber Day Heigs. 2½ p (Creighton Laboratories 20p	17pm 42pm	12
		21/9 55/9 25/9 26/9	300 1400 4100 2500 8300	7 pm 7 pm	Energy Capital 1p	320	
5	加州	5/9 20/0	25pm 25pm	L pm	Fisons	27pm	-12
Õ		-	170m J	27724 8544 11000	Plessarama 5p TACE 10p Minion Souare	29pa 10pa	-8 +2
,		23/9 12/9	21pm 10pm	200	Wilsham Sp	11pm 2pm	-1

a Annualised dividend is Figure: based on prospectus estimates. I Dividend rate paid or payable on part, of capita, for based on dividend on full capital, a Assumed dividend and yields. Dividend and yield exclude special payment reason, or estimated aimsulfact dividend rate, come based on provious year's exception, L. Estimated amounts indeed, comer and pic based on latest annual earnings. M Dividend and yield based on Prospectus or other official industs for 1998. It Dividend and yield based on prospectus or other official estimates. W Pro Forma figures, y is melled dividend, cover and pic ratio based on prospectus or other official estimates. W Pro Forma figures, y is moster, a first of the based on formation affecting price. Proceedings of the prospectus of the prospec

#### TRADITIONAL OPTIONS

First Dealings Aug 22
 Last Dealings Sep 9
 Last Declarations Nov 24
 For settlement Dec 5
 For rate indications see and of

Property, Control Securities, KentishProperty, Hickson, Singer and Friedlander, Scotlish and Newcastle, T. Cowle, Belhaven, BOM Holdings, Rev Williams, Top Value, Premier Consolidated, West Trust, Ladbroke and Ambertage, Day, Doubles were transacted in RSR and Ladbroke.

New Issue

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		π_	CALLS			PUTS					L.	CALL		Nov.	PUIS Feb.	May
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G.K.H. (*314.)	280 280	42 24	50 31 14	19	27 2 51 <sub>2</sub>	30 4 8 23	15	Beech (*46	43	460 500	18 21		24 24	37	10 43 104	23 46
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STC (*255.)	240 260 280	22 10	33 21 12	38 25 15	5 12 27	. 9 . 16 . 28	12 18 33	Midlans (*39)	S)	390 420 130	17 3	30 14	37 22	3	12 25	18 37
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Woolworth (*239 )	240 250	11 5	22 12 8	30 20	10 25	17 27 45	18 28 47	- British	Sption Gas	160 170	17 <sup>1</sup> 2	Jan 23	Mar 24	• Oct	Jan 3	Mar 44
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Cardbary Schweppen	330	42	57	-1	- 5	11			1950	15	11	. <b>4</b> 1	7 [ ii	H 208	208	208

September 1, 1988

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d posts

### AMFV at Half Year

AMEV's profit after tax for the first half year of 1988 amounted to Dfl 134.2m, excluding the realisation of fixed interest investments. The comparable figure for 1987 was Dfl 133.1m. Including realisations the figure was Dfl 134.9m, an increase of 11.0% compared with the same period last year.

Total income from life assurance, general insurance and other activities grew by 11.6% to Dfl 4.3bn.

Earnings per share were Dfl 2.43, an increase of 9.5%.

Shareholder funds at 30 June 1988 stood at Dfl 2.7bn, Dfl 400m higher than at the end of 1987.

An interim dividend of Dfl 0.75 per ordinary share has been declared.

Barring unforeseen circumstances and exchange fluctuations, profit for 1988 will at least equal profit exclusive of exceptional items for 1987 (Dfl 262.4m).

Copies of the Half Year Report can be obtained from: AMEV (UK) Limited, 1 Houndwell Place, Southampton SO9 INY. Telephone: 0703 37411

### AMEV Worldwide

AMEV is an international insurance and financial services group based in the Netherlands. Its shares are quoted on the Amsterdam Stock Exchange and options on AMEV bearer certificates are traded on the European Options Exchange. Total assets are Dfl 27bn.

AMEV operates in 13 countries: Belgium, Denmark, Eire, France, the Netherlands, Spain, Switzerland, the United Kingdom, Australia, New Zealand, Hong Kong, Singapore and the USA.

### AMEV in the UK

AMEV (UK) offers a comprehensive range of financial services through its operating companies, Gresham Assurance Group and Bishopsgate Insurance.

Gresham is engaged in all aspects of life assurance, pensions, mortgages and unit trusts. Bishopsgate, together with its subsidiary Leadenhall Insurance, is a general insurance company operating in marine and non-marine business through the London market as well as in travel, motor and other personal insurances.

N.V. AMEV, Utrecht, The Netherlands



Hypobank International S.A.

Luxembourg

This announcement appears as a matter of record only.

DM 100,000,000 5%% Bearer Bonds of 1988/1993

Issue Price: 100 %%
Listing: Munich and Frankfurt am Main

Bayerische Hypotheken- und Wechsel-Bank Aktiengesellschaft

### WALES

The Financial Times proposes to publish this survey on:

19th September 1988

For a full editorial synopsis and advertisement details, please contact:

CLIVE RADFORD on Bristol (0272) 292565 Fax (0272) 225974

or write to him at:

Merchants House, Wapping Road Bristol BS1 4RW

FINANCIAL TIMES

# HONG KONG AS A FINANCIAL CENTRE

The Financial Times proposes to publish a Survey on the above on

**26TH OCTOBER 1988** 

For a full editorial synopsis and advertisement details, please contact:

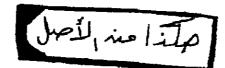
PETER HIGHLAND

on 01-248-8000 ext 3595 or write to him at:

Bracken House, 10 Cannon Street London EC4P 4BY.

FINANCIAL TIMES

High



#### **LONDON STOCK EXCHANGE**

AN ATTEMPTED technical rally in the UK equity market ran into the sand in late dealings yesterday as underlying worries about sterling and domestic interest rates reasserted themselves. Firmness in the dollar helped international blue chip stocks, but UK Government bonds slipped lower espite a steady pound. Construction and consum

8201 15

issues, which have taken the brunt of the shakeout in equities since last week's increase in UK base rates in the wake of the record monthly trade deficit, tried to rally after three of yesterday's steady trend in sessions of falling share prices: the Sterling Index. The sessions of falling share prices. There was little strength behind a round of early gains,

Maxwell

hopes to

AGB RESEARCH saw its

shares rise again when it was confirmed that Mr Robert Max-well's Pergamon Professional

had made a £134m bid at 220p

cash per share. The bid. announced early yesterday morning took some dealers by surprise. After touching 221p.

AGB shares settled at 218p, up

4 on the day.
The deal was recommended

by the AGR board, but not irre-

vocably, leading to speculation among analysts that another

yesterday was brisk and although the turnover figure

was obscured by reporting

errors, dealers estimated that

around 5m AGB shares were

bought. The agency broking

side of Alexanders Laing & Cruickshank was believed to

have been acting again on Pergamon's behalf, offering 220p

for immediate delivery of AGB stock. By the close, it looked as

if PPES had picked up roughly

another 12 per cent of AGB, raising its holding to some 27

Mr Maxwell has declared

plans for PPFS to develop an

employment services division.

a statement which some ana

lysts say might point to a later bid for Blue Arrow. The

favourite to counter-bid for

AGB is Swiss-based, cash-rich

Adia, which bid for Manpower

last year.

Maxwell Communications

was also in the news yesterday

as it reported disappointing

interim profits of £72m. Despite the poor figures, the shares performed strongly, adding 3 to 199p after breaching the 200p

level earlier on.
Turnover of 5.3m was

boosted by two trades of

dealers said indicated firm

institutional support. The profit news had been largely discounted in the run down

over the last few days, but dealers said the shares were attractive on a yield basis and showed little downside.

Peachey goes Dutch

10 3

r might appear. Trade

	_	
Agostan	t Dealler	2 Detes
Test Dealings: Aug 15	Sep 5	-Sep 19
Option Declarati Sep 1	6ep 15	Sep 29
Lest Deallegs: Sep 2 .	Bap 15	Gap 30
Account.Days Sep. 12	Sep 25	Oct 10
'New year death Life are one bes	ngs, mey tak Janes days	place from

however, and the final picture was unimpressive. described by Mr John Shepperd of Warburg Securities as particularly discomforting in view Gilt-edged market is still con-

FT-A All-Share Index

fient shares in the market to

Prior to the new offer, which

values Peachey at around £282m, Wereldhave had

received acceptances in respect

of 12.5 per cent of Peachey

or finary shares. Only a short while ago, Peachey revised its net asset value estimate to 676p in an effort to fend off Wereldhave's unwelcome attentions. The Peachey share price closed 32 higher at 644p,

One of the world's largest marketers and producers of

inbricants, Burmah Oil, gave a slash of colour to an otherwise drab energy sector. The shares

rose 9 to 512p in concert with a

strong buy signal from Dr Homa Motamen of CIBC Secu-

rities Europe. She believes the group's strength "lies in its geographical spread and ability to utilize its trands, manage-

ment and marketing tech-niques to achieve leadership in specialised market sectors".

reflect the group's solid growth prospects or its estimated asset

value of £9 per share, contin-

ues Dr Motamen. Burmah should he able to benefit from

depressed oil prices this year and produce another excellent result. CIBC is looking for

interim profits of £41m plus

when the group reports next Thursday, and a full-year out-come of 282m compared with

Burmah acquired UK-based

APP Chemicals, a leading

The current price does not

**Burmah shines** 

Aug

to developments in the foreign exchange markets and bond traders have been walking on eggshells since last week's UK trade figures shock. While the bond market now

faces a blank period for UK economic data, there is nervousness shead of the announcement on Friday of the latest employment figures from across the Atlantic.

Business in Gilts was glack with traders taking a cautious view. Longer dated issues closed with losses of & with stock taken up on yields just below 10 per cent. Shorts gave up % or so, also without seeing The FT-SE 100 Index added

Equity shares traded

agent in Turkey. The company will be involved in the distribu-

tion of fuels, LPG and lubri-

Electronics group BSR tumbled 15 to 68p after the com-

pany announced that the long-

running merger talks with an

unnamed party had come to

nothing. Turnover was 5.3m

shares as investors reacted to

the news by selling stock heavily, forcing dealers to

One leading marketmaker commented that the market in the shares looked "very ner-yous", it is believed that the

merger candidate withdrew as a result of the recent increases

in UK interest rates, which

raised its potential gearing costs to an unacceptable level.

Dealers and analysts

tity of the candidate which was believed to be either Hong Kong or US based, but specu-lated that any new predator would have to be cash rich. One analyst referred to "pie in

the sky", saying the announce-ment was the latest in a string

of disappointments from BSR.

International stocks were

steady at their much reduced levels. Dealers could find little

in the way of highlights, but mentioned a late drift in Bee-

cham, down 2 to 463p as analysis waited for news from the heart drug conference in Vienna. Elsewhere, Pearson

regained 12 of the recent loss

to close at 709p as bid specula-

nained unsure of the iden-

BSR setback

mark prices down.

Turnover by yolume (million)

6.9 points in early trading but softened later, slipping away at the close to show a net fall of sizes and a far cry from the 5.000 shares recently quoted by some firms. 1.2 at 1753.6. The mood The market received some remained very nervous, with attention still fixed on the for-

pargain size to 200,000 shares

too much variation in price,

but British Gas eased to 172%p

bright showing, with the clear-ing banks still wanted on the

expected benefits of higher

base rates, and insurance shares encouraged by a batch of good half time results.

Among composite insurers, Guardian Royal Exchange

(GRE) added a couple of pence to 178p after announcing interim profits of £111,7m, which was at the higher end of predictions. Traders fastened

onto the 16% per cent increase in the interim dividend, which

raised hopes of a further rise in

the final payment. GRE's fig-ures were regarded as an excel-

lent omen for next week's trad-ing news from Sun Alliance, a penny firmer at 957p.

Pearl Assurance added 2 to

469p after announcing half time profits also at the higher

end of expectations, followed by news that Mr Larry Adler's FAI Insurance has lifted its

stake to 8.09 per cent. Specula-

tive interest continues to fuel

life companies, speculative interest waned as traders shied

away from the increased cost of financing such holdings. Allied Life (301p) and Legal & General (292p) fell back.

Among the insurance brokers, Steel Burrell Jones

jumped 11 to 219p after the

higher pricing on marine rein-

surance contracts following the

A switch developed out of Sedgwick (231p) and into Wil-lis Faber, 3 better at 234p. Both

brokers have interim figures

due, Sedgwick on Sep 6 and Faber on Sep 13. Sedgwick

have outperformed the sector

on takeover hopes, and County NatWest WoodMac believes the

NatWest WoodMac recom-

mends a switch out of Whit-bread into Bass, on the

grounds that Whitbread's float-

ing rate debt will move more

expensive to service. County

analysts have lowered their 1968 pre-tax forecast for Whit-bread by £10m to £212m. The

shares were unimpressed, how-ever, with Whitbread gaining 2 to 285p and Bass slipping 2 to 752p. Irish Distillers rose 3

shares are overpriced. The brewery sector again failed to excite. Broker County

However, elsewhere in the

the Pearl price.

300

Financial issues made a

amid turnover of 5.6m shares

eign exchange and London money markets. Equity turnover remained thin, with the Seag shares total of 357.2m expected to include a substantial contribution from business between marketmak-ers. The trading war between the big securities houses took a new turn when Warburg Securities narrowed its pricing

However, a drag on the mar-ket was unusual activity in "Footsie" futures in the neighspread in several of the big property shares, but lifted its about twice competitive quoted

encouragement from a return of speculative interest after Wereldhave, the Dutch group, purchased shares in Peache) Property, putting a price tag of £282m on the UK property group, and Pergamon Professional and Financial Services bid £134m for AGB, Britain's largest research company.

pouring LIFFE market. Reports suggested that a leading US house had apparently taken a beerish stance on TK equities.

The High Street retailers took on a steadier appearance abated. However, with the extremely fragile, most quotathe day. There was another good two-way business in Sears (volume amounted to some 6.8m), but with sellers

Avdel advanced to 64%p before settling 5½ up on the day at 63p following news that Banner Industries has acquired an option to purchase Suter's holding of 35m ordinary shares in the group at 70p per share. Suter put on 4 to 177p. Granada attracted more

business than most (2.6m) with the shares nudging a few pence higher to 292p. British Airways were also among the more actively traded stocks (5m) but settled 2 cheaper at 147p. Yale & Valor, in which Williams Holdings and Ingersoll Rand both hold stakes, took a dis-tinct turn for the better with an improvement of 10 to 410p.

meeting takes place today.

A stale Food sector was

recent selling pressure undertone of the market still tions showed minor losses on eventually in command the shares eased 4% further to

The postponed annual general

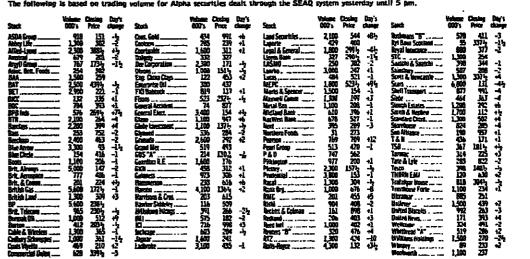
enlivened late on by a run in SW Berisford. In thin overall turnover, the shares jumped 15 to 371p, with dealers saying they were not aware of any special reason for the rise. A late split order of some 350,000 shares was enough to move the price of a stock which dealers describe as "dangerous to trade" on account of its volatil-

Motor shares showed some sign of emerging from the recent depression brought on by Jaguar's uncertainties.Selling pressure lifted and investors began taking on board small quantities of stock,

91.43 127.4 97.03 97.33 1349.0 (8/2) 187.8 (18/6) 734.7 43.5 (15/2/63) (26/10/71) (7/1)Ord. DI. Yield Earning Yid %(full) P/E Ratio(Net)(\$\phi\$) SEAC Bargainst(5pm) Equity Turnover(Em)† Equity Bargainst Shares Traded (mi)† Equity Bargains 154.6 23.183 5-Day average ●Opening ●10 am. ●11 am. ●12 pm. ●1 pm. ●2 pm. 1410.4 1414.2 1409.9 1411.3 1411.8 1411.8 DAY'S HIGH 1415.0 DAY'S LOW 1409.4 Basis 100 Govt. Secs 15/10/26, Fixed Int. 1928, Ordinary 1/7/35, Gold Mines 12/9/55, SE Activity 1974, a Nit 9.92 † Excluding Intra-market London Report and lates

FINANCIAL TIMES STOCK INDICES

#### Trading volume in Major Stocks



including issues such as Lex Service and Lucas Industries, both of which have recently been reviewed favourably.
Warburg Securities recom-

mends Lex,saying that "the rating is too low because fears of imminent cyclical peaking in UK automotive retailing and US electronic distribution are overdone". The research team there also thinks the a recovery in the profitablity of US electronic component business is largely still to come.

Morgan Grenfell favours Lucas, advising clients to buy "for a major re-rating as adverse sentiment subsides" The charge offer consistent outperformance from the current price level, particularly prior to the annual results in Octo-

ber. Morganconcludes. Two other distributors in the van of the recent downturn perked up considerably. Har-

twell gained 6 to 120p, while T Cowie bounced back 5 to 111p. Enlivened to a certain extent

by the Peachey developments, Property shares staged a wel-come rally. In its current weekly review of the sector, Hoare Govett, the securities house, believes that the recent slide in property shares, particularly in the case of the leading investment companies is unjustified. Land Securities, up 81/2 at 544pp, is rated as excellent value in uncertain market conditions because it has no

MEPC revived with a gain of 91/2 at 5231/2p, while Great Portland at 341p, were 5 better. Slough Estates held most of an earlier gain to close 6 dearer at 292p following the interim fig-

Awaiting further developments in the friendly merger with Farmers Group of the US,

variable rate debt.

**BAT Industries continued to** trade well. Turnover was down on recent levels but, at 2.5m shares, it was still above most other Alpha stocks. At the close the BAT price was a touch lower at 439%p. In Traded Options, there was

further activity in the FT-SE 100 Index contract, which attracted 2,486 calls and 5,169 puts. Both Trusthouse Forte, 1,541 calls, 750 puts, and Sears, 2,193 calls and 255 puts remained active, but the busiest feature was British Gas with 1,395 calls and 910 puts. Overall, the market recorded a total of 32,092 contracts, of which 16,710 were for the call and 15,382 for the put.

 Other market statistics, including FT-Actuaries Share Index and London Traded Options, Page 30

### Ruropean refiner and marketer of atactic polypropylene, for 25m yesterday. It also announced the formation of a 240m company, Turcas, in a 50/50 partnership with its local **NEW HIGHS AND LOWS FOR 1988**

APPOINTMENTS

NEW HOUTE IN.
AMERICANN (T)COME. BROOM, BRUTHERS
(I) Irich Distillers, ELISCIPECALS (T) Ercoson
(L.M.). NEWSCHAME (T) Shoel Burril, LEIBSTEE
(T) Medininster, CELS (R) CONTROL OFFI, LEIBSTEE
(T) Medininster, CELS (R) CONTROL OFFI, LEIBSTEE
(T) Hemilton (I).
BRITTEN FURBER (TO LOAISE (R) CAMADIANS
(I) Energer Minerals, MARIUS (R) First Met.
(B). WETVER FURBER (TO LOAISE (R) CAMADIANS
(I). ENERGE (TS) Andrews, MEDINING (R) First Met.
(Creat Nichol., MACHINER, MCCIPTY & Store,
STOMES (TS) Andrews (L). Beachs Leiburg.
EROTHE (N). Discons Dot. On. Rd. P.L. Elem.
Field (Mrs.). Nacy, Rathers, Storebourg.
Sammer Int'l - Undergrounds, Vivale, Ward
(White, ELECTRICALS (4) Micropart, Poolt,
SECOND TO SERVICE (R) ROOM.

ENGAMESTRISS (R) Hobson, TACE, FOOOS. Peachey Property's days of independence quickly came to an end yesterday as the Dutch property group Wereldhave raised its cash offer for the raised its cash offer for the company from 612p to 650p per share. The City immediately sensed that in the current climate the increased cash offer would be enough to win the day. In the event, the move soon finshed out willing sellers and by the end of trading, Wereldhave had mopped up suf-

Centreway Ind., Covan de Gri., Dyeon (J. A.1) 'A. J.S. Pathology, London Infl., Mayborn Grp., Parksleid Grp., Spong Hidge, SERNHARDE (2) Durbam (D.G.), Reine, Lifelde (1) Select TV, MOTORS (1) Maych Grp., Spong Hidge, Select Research (1) Select TV, MOTORS (1) Maych Grp., Select Research (1) Select TV, MOTORS (2) Mores Measuring Grp., Clark Hooper, Morson Grps., Paperson (1) Maych Grp., Sanichi & Sauchi 6.3% Cv. PV, TURSTS (3) Turogmorton Tet., Selice, L.LT. Hidge, PROPERTY (2) Conneils, Estate Agents, Scathead Stadius 6.5% Cv. PV, TURSTS (3) Turogmorton Tet., Selice, L.LT. Hidge, Transcool, D., Wirms, Gd.S. (3) Elf. UK. (2) Life L.L. Kelt Energy, Other Fee., Senior, Selicit Const., Selicit Const., Morth Kalguri, Errect Lat., Call Energy, Other Fee., Senior, Selicit Const., Errect Lat., Const., Morth Kalguri, Errect Lat., Call Const., Morth Kalguri, Errect Lat., Market Fee., Thorop Fee., Transc.

more to 349p.

Building shares, hit hard in the recent shake out, staged a largely technical rally. Conditions overall were described as "extremely quiet" and there was little substance to the movement. BPB picked up 7½ to 269½p, while Ibstock Johnsen, regarded by many as a stock with defensive merits, hardened a few pence to 177p. British Dredging, in which Newarthill and RMC both hold stakes, met with a flurry of speculative activity and put on



All these Notes have been sold. This announcement appears as a matter of record only.

### **Caisse Centrale** de Coopération Economique

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Issue Price: 101% per cent.

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July 6, 1988

# Senior posts ASSOCIATION. He succeeds director-secretary lift Basil, Damer who is retiring. Mr Grant was director of naval

## Trust

Mr Graham Picken has been appointed a managing director of FORWARD TRUST GROUP. In addition to his current esponsibilities as director. operations, he has assumed overall control of all the instalment finance and leasing businesses in the group. The recent acquisitions of Comfort Finance from RTZ, and Finance from KTZ, and Concord Leasing (UK) from Hong Kong & Shanghai Banking Corporation, are included. Mr Wallace Stein has been appointed director, corporate business division, following the merger of the group's corporate and industrial finance divisions, and the acquisition of Concord Lessing (UK) of which Mr Stein has been appointed managing director.

Mr Graham Wilkes has been appointed a director of KINGSLAND DATA SERVICES, Birmingham.

m 600 FANUC ROBOTICS, Colchester, has appointed Mr Gerald P. Shrimpton as finance director and company secretary. The company is jointly owned by the 600 Group, and Fanne, of Japan. Mr. Shrimpton has been with the 600 Group for 18 years.

III Mr Neil Grant has been appointed director of the FINANCE HOUSES ASSOCIATION and of the

### manpower planning at the Ministry of Defence and has been with the FHA and ELA since January.

Mr Giogio Questa, director general of IMI International and executive vice president of IMI, has been appointed chief executive of IMI CAPITAL MARKETS (UK),



Mr Roger Colomb (above) has been, appointed, managing director manufacturing and marketing, at TEXACO, London, with overall responsibil-ity for all downstream

Mr Mike Chesworth, formerly marketing and development director of START-RITE SHOES, Norwich, has been appointed joint managing director, sharing the post with the company's chairman, Mr David White.

Mr P.J. Bernhard has be appointed an executive director, and Mr C.M. Crookshank, Mr S. Harker, Mr J.McL. Munro, Mr I.A.R. Nurse and Mr R.K. Webster have been appointed directors of BOWRING AVIATION, Mr K.N. Hadden has been appointed a director of

 Mr Harry Millhouse has been appointed divisional managing director of the steelworks services division of FARER PREST, Rotherham. He joined the group in 1964.

■ WALTER LAWRENCE PROJECT MANAGEMENT . has appointed Mr Bob Oliver as a director. He joins from Higgs & Hill Management. Mr Tony Paxford becomes marketing manager.

Mr Alan Nickalls, sales director of of NEI Parsons, has been appointed to the new post INTERNATIONAL He will be based in Newcastle.

MARINE AND GENERAL operations. He succeeds Mr MUTUAL LIFE ASSURANCE SOCIETY has appointed Mr retired. Mr Colomb, who lipined Texaco in 1984, was deputy managing director director. He is chairman of the PK English Trust, and sheard and information ser.



companies.

Premier Consolidated Oil Fields, and First Republic Bancorp.

as managing director.

CO has admitted to partnership Mr David Kirk, Mr Toshio Minoura, and Mr David Canlkill, formerly of

the London office and now in



Mr Paul Brooks (above) has been appointed managing director of PRUDENTIAL VEN-TURE MANAGERS, part of the Prudential Corporation. The company provides equity finance for growing private

non-executive director of

E STERLING KITCHENS, BEDROOMS AND DOORS has appointed Mr David Griffiths

ARTHUR ANDERSKN &

John Tiner (London); Mr George Campion and Mr David Lovett (Birmingham); Mr Bill Holmes (Newcastle); and Mr Godfrey Taylor (Manchester). Other admissions include: Mr

### **COMMODITIES AND AGRICULTURE**

### Indonesia sets out to encourage oil explorers

By John Murray Brown in Jakarta

INDONESIA YESTERDAY announced investment incentives for foreign oil companies in a bid to stem the downturn in exploration

activity.

The changes were unveiled by Mr Ginandjar Kartasasmita, the Oil and Energy Minister. They are aimed at encouraging exploration of marginal fields which previously seemed unattractive because of high development costs.

The move comes as many foreign contractors are entering vital talks with Pertamina, the state oil monopoly, to extend existing 30-year contracts, nine of which are due to expire in the next 10 years.

The announcement follows months of concerted lobbying by the contractors, many of whom are reducing capital after the foreign contractor has spending in the face of low extracted costs and a 15 per

prices for oil, still Indonesia's biggest foreign exchange

earner. Pertamina earlier announced that budgeted spending by the foreign contractors would fall by 30 per cent in 1988-89, to about US\$2.3bn, down from US\$3.28bn in 1987-88.

A US embassy report warned that without significant new finds Indonesia, which is the only Asian member of the Organisation of Petroleum Exporting Countries, could run out of oil by the late 1990s. Yesterday's changes include a new definition for when a field is considered commercial,

previously a main stickingpoint.

Pertamina will now issue a

production licence if it is assured of at least 25 per cent of the block's total oil revenues

cent share of the production. The previous ruling on commerciality, set at 49 per cent, meant few companies would explore frontier areas, where development costs and risks are that much greater, for example deep water or dense jungle.

The Government, in a further concession to the contractors, said that for small finds in these high-risk areas the production split would be altered from the existing ratio of 85:15, in favour of Pertamina, to 80:20.

The Government clawed back ground by restructuring cost-recovery. It now takes a 20 per cent portion of the output before the contractor starts to recoup its costs. This applies even when a field is not established as being

### Jamaica settles Alcan tax row

By Canute James in Kingston

THE JAMAICAN Government has agreed with Alcan of Canada a cut of production taxes paid by the company on its bauxite (aluminium ore) mining and refining operations in the island.

in return, Alcan will progressively increase production, eventually bringing its two refineries on the island to full rated

capacity. Mr Edward Seaga, Jamaica's Prime Minister, said the new tax regime was similar to that agreed this year with the Aluminum Company of America, a joint owner of a

refinery in the island. The levy, criticised by the companies since imposition 14 years ago, has been halved to a rate of 3 per cent of the average realised market price

taxes at a rate of 33.3 per cent on its local operations.

The company, which has been producing about 700,000

tonnes of alumina a year from its two plants, will now lift output to just under 1m tonnes a year by the end of 1989, and then raise this to full rated capacity of 1.09m tonnes a Mr Seaga said: "The former

levy regime has been replaced by a basic levy indexed as before to the actual prices realised for primary aluminium, except that this will now be charged as a normal production cost, with net profits being liable to Jamaican corporate tax. This beneficial to both parties.' Mr Gerald Clarke, Alcan

executive director for raw for aluminium ingot, while materials, said the new pact Alcan will now pay corporate represented a realistic view of

the economics of alumina (aluminium oxide) for the

Industry representatives said the deal with Alcan would contribute to the Jamaican Government's efforts to raise mining and refining of bauxite. The island, the world's third largest bauxite producer, after Australia and Guinea, produced 7.7m tonnes of the

ore last year. A government official said conclusion of the pact would leave the Government free to concentrate on current efforts to reopen the island's largest refinery, a 1.2m tonne-a-year facility closed three years ago.

The Government has been negotiating reopening terms with Kaiser Aluminum of the US, one of the refinery's

### China aims to top rare earth league

By Lynne Curry in Peking

CHINA WAS aiming to become the world's biggest rareearth exporter by 1990, China Daily, the official English-language newspaper, Rare earths contain metallic

elements frequently used in the electronics and high-Chinese exports supply about 20 per cent of the global market but the country planned to increase this to 30 per

cent in two years, the paper At a conference on rareHebei Province, it was reported that rare-earth production reached 15,100 tons last year, a 6,000-ton increase on 1985.

China has the world's largest reserves but China Daily said the country ranked second to the US in exports. The US, leading processors of rareearth minerals.

The paper was negotiating with the US, Canada and Japan about importing advanced technology to further develop rare-earth products. However, an official from

COCOA E/tonne

the rare-earth supervisory group of the State Economic Commission was quoted as saying that agreement would be difficult to

The paper said China had established rare-earth joint and Shenzhen special economic

However, the scale production was limited and the processing techniques used achieved in industrialised

LONDON METAL EXCHANG

### Ok Tedi workers end 13-day strike

A 13-DAY strike by workers at Ok Tedi Mining, the Papua New Guinea copper and gold producer, cost up to 6,000 tonnes of copper concentrate output and 25,000 ounces of gold, the company said after the strike ended yesterday, Reuter reports from

Ok Tedi is managed by BHP, which is a 30 per cent shareholder in the venture. Mr Richard Carter, Ok Tedi

managing director, said throughput of about 50,000 tomes a day was lost in the dispute over wages and living conditions, though shipments were maintained from stocks held at loading facilities on

"But they've gone back to work without any changes,"

work without any changes,"
he said.
Mr Carter said the strike
accelerated Ok Tedi's
conversion from a copper/gold
producer to an all-copper producer.
A gold leaching plant, which
yielded 10,558kg in this first
half, was mothballed in the
strike, ending gold-bullion
output three weeks earlier
than planned.

than planned.

Ok Tedi resumes operations as a producer of copper concentrate with a high gold-content rating. Mr Carter said throughput will restart at about 50,000 tonnes of ore a day, rising to 70,000 tonnes.

### PNG's gold outlook bright

By Kenneth Gooding, Mining Correspondent

PAPUA NEW GUINEA could PAPUA NEW GUINEA could become the world's fastest-growing gold producer in the next five years, James Capel, stockbrokers, said. Its gold output could grow from about 30 tonnes (964,500 troy oz) this year to 90 tonnes (2.89m troy oz) in 1992-93.

But this depended on

But this depended on decisions in the next four months about the world's two largest undeveloped gold deposits, both in PNG: • Porgera deposit, awaiting government approval and the granting of a special lease;

Lihir Island project, being mulled over by British Petroleum, the BP Gold subsidiary

of which owns 80 per cent. Pacific, Renison Goldfields and MIM Holdings, each own a third of Porgera. Capel said BP Gold was likely to have a stockmarket quotation soon. PNG would become fifth available gold equity market after South Africa, the US, Canada and Australia.

### Making time for Africa's food

John Madeley on a UN project to free women from drudgery

N ISOLATED villages in countries, The Gambia, an important clue is emerging as to how at least some of the continent's food problems can be eased.

Results of a project funded by the United Nations Development Fund for Women (Unifem), which is based in (Unitem), which is based in New York, suggest that if African women were released from the many hours of drudgery that most of them face they would use the time to

The project has supplied milling machines to 15 Gambian village communities to grind millet, the coarse grain, into the flour which serves as their staple food. The mills, as they are known locally, have become the talking point of village life in The Gambia and have led to badly-needed increases in food

output. output.

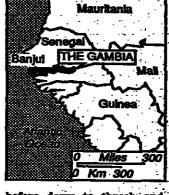
For millions of Africans millet, a drought-resistant crop, is all that stands between life and death. While men usually grow the millet, it is the women who weed the crop and pound the harvested product.

Turning millet into flour is a job that African women traditionally do by hand. This usually means about four hours of laborious, hand-blistering pounding each day.

Before pounding the millet into flour, the women thresh the grain, separating the millet from the stalk for about two hours and then remove the hours and then remove the husks, another hour's work at least. In all, therefore, about seven hours' work is needed.

In the village of Njau, close

to the border with Senegal, Ms Farna Ceesay, 40, used to rise



before dawn to thresh and dehusk millet. She would then head for the fields to weed, hoe and generally care for the

used to go to the fields with the pounding hanging over me, waiting for me when I got back home," she

After the pounding was done she would search for wood-fuel, draw water, and, much later, cook the family's evening meal A 16-hour day, seven days a week, was her unenviable lot, as it is for millions of African women. Today, Ms Farna Ceesay and the other women of Njau village pound no longer. Instead of processing millet by hand they take it to the shedthat houses a small diesel-powered mill and leave it for trained operators to

grind.
The machine grinds the millet in five minutes. The women pay about one US cent a kilogram for the service -

and save four hours a day.

The women view this saving of time with delight and

So popular are the mills that women from villages which still lack them are walking miles each day to bring their millet to villages with mills. Women from 23 villages are making use of the mill-

It is what the women do with the time they save that has significant implications for African agriculture as a whole. The unlocking of four hours a day is seen as a heaven-sent opportunity to grow more food.

Ms Farna Ceesay said the energy she would have put into pounding she now puts into the fields, weeding more and growing more. She has planted maize and beans, some of which she sells, giving her a cash income for the first time in her life.

Another woman said that she grows peanuts and rice in the time she saves. She sells the nuts and earns close to \$150 a year, a significant amount in rural

In the village of Faraba Banta, which also has a mill, the women have expanded their vegetable gardens to grow more cabbages, onions, tomatoes, source (African spinach), carrots, peppers and

spinach, tarros, por anbergines.
Some Gambian villages are finding that the extra food they now grow is making the all-important difference between going hungry and having

In one village the president of a women's group said: Before the mill came, we were sometimes short of food. Now we have food and some left to

per cent, to 45,600 tonnes.

described as a temporary easing of volume and price

However, that was accompa-nied by sluggish demand, sales

of Emmental being particularly affected.

per cent of all exports by the union, followed by gruyere and

Exports make up almost 60 per cent of all sales by members of the union, which

fell in 1987-88 by 2.3 per cent, to

sbrinz, a grating cheese.

77.200 tonnes.

astonishment. One said: "It's a miracle. It has freed me from drudgery."

So nonular are the mills that The availability of extragations and the mills that the mills the mills that the mills that the mills that the mills that the mil locally-grown produce reduces the need to buy food from outside, which should help The Gambia to cut imports of food,

especially rice.
"If women get the technology, Gambia could be self-sufficient in food," said a field-worker.

The West German-made mils cost about £800 each and a community that receives one saves an equivalent amount over five years. This is then paid back to Unifem, allowing the agency to buy mills for other villages.

Milling machines are as yet in their infancy in Africa. "Probably less than 5 per cent of African villages have machines that put an end to pounding by hand," said a representative of Intermediate Technology Development Group, which is based in Rusby.

The spread of such machines across African countries that grow millet, sorghum and other coarse grains could boost food output in some areas where a boost is most

Possibilities exist for saving yet more time. Women in The Gambia, having tasted modern technology, are wondering what else is

In Njau village a woman said: "I'm thankful for the mill but it's still a full day for us. What we need now is a thresher that can save us two hours a day."

Saskatchewan

### Dairy co-op seeks export boost

DENMARK'S BIGGEST dairy company, Mejeriselskabet Danmark, aims to become an international supplier of brand-name foods.

The company, a co-operative, is planning to break out of limitations imposed on Danish milk supply.

It will change its name to MD Foods this autumn. The change is being made to:

• Help the company make itself better known to an

international public.

Prepare for the intensified competition it expects to meet within the European Community after creation of The group processes about 11m tonnes of milk a year, about 60 per cent of Denmark's total output. It claims to be Europe's third largest dairy group and the world's fifth largest. Last year its turnover amounted to about Dkr11bn

It is a leading exporter of butter, cheese and other milk products but these are usually marketed as Danish products and not under the company label.

Mr F. A. Christiansen, the co-operative's managing director, said: "The EC milk quotas restrict our growth and we must therefore expand abroad by becoming a well-known supplier of brand-name goods."

Its plans include acquiring dairies abroad. It has its eye on Ireland and the US in view to applying Danish know-how to gain a bigger market share in the European Community, the US as a way to evade market limits on US

• Conditions on the international cheese market

crop damage assessed remained difficult over the past 12 months, the Swiss Cheese Union said, writes John Wicks in Zurich.

In the year which ended on July 31 its exports fell by 3.1 By Robert Gibbens in

THE Saskatchewan Wheat Pool, a big farmers co-operative, now estimates that the Canadian-prairie province's grain harvest will total 10.6m The union was able to increase its export prices in April because of what it

tonnes this year, down from its July estimate of 12m tonnes. That would be 48 per cent below the five year average of 20.5m townes, including wheat, cats, barley, rye, flarseed and canola. The lower expected output is attributed to the

severe drought which gripped

summer.

The co-operative said the quality of most crops delivered might deteriorate because of recent heavy rains. Harvesting has been disrupted by the

#### WORLD COMMODITIES PRICES

#### **LONDON MARKETS** ZINC WAS the star turn on the London

Metal Exchange yesterday. As news of bigger than anticipated production losses at a Metaligesellschaft's plant at Duisburg added to existing concern about the tight supply situation, the metal was lifted to the highest prices for three-and-a-half years in sterling torms. That level was not maintained but the cash price still closed £24 up at £816 a tonne, and the three months £17.25 up at £804.75 a tonne. The West German company said delays to repairs at the Duisberg plant were likely to raise output losses to 3,600 tonnes instead of the 2,000 tonnes estimated earlier. The cocoa market was also strong early on, with Tuesday's rally being extended and the December position touching a peak of the close. In line with the weaker tone in New York, and the price finished the day £2 down at £848 a tonne. SPOT MARKETS

Crude of (per barrel FOS S	eplember)	+ or -
Dubal	\$12.85-2.95q	-0.065
Brent Blend	\$14.50-4.55y	-0.02
W.T.I. (1 pm eat)	\$15.30-5.350	
Oil products		
(NWE prompt delivery per	tonne CIF)	
Premium Gasoline	S178-181	
Gas Oif	\$128-129	+0.5
Heavy Fuel Oil	\$69-70	+1
Naphtha	\$135-137	
Petroleum Argus Estimates		
Other		+ 01 -
Gold (per troy oz)-	\$429.50	+0.75
Silver (per troy oz)-	654c	-3
Platinum (per troy oz)	<b>\$</b> 526.0	+ 1.5
Paliadium (per trov ez)	\$122.90	+0.25
Aluminium (free market)	\$2790	-40
Copper (US Producer)	1065 <sub>8</sub> -110c	
Load (US Producer)	38c	
Nickel (free market)	610c	+ 10
Tin (Europoan free market)		+20
Tin (Kuala Lumpur market)		
Tin (New York)	348.50c	-0.25
Zinc (Euro, Prod. Price) Zinc (US Prime Western)	\$1275	
Zate (O2 Frank) wastern)	655 <sub>8</sub> c	
Cattle (live weight)†	112.68p	-1.03
Sheep (dead weight)?	162.33p	-8.09*
Pigs (live weight)f	60.600	+0.90*
London daily sugar (raw)	\$264.2m	-2.8
London daily sugar (white)		+1
Tate and Lyle export price	£268.5	-1.5
Barley (English food)	£104 Qy	+0.5
Maize (US No. 3 yellow)	€126g	
Wheat (US Dark Northern)	£120x	
Rubber (spot)♥	70.75p	-0.50
Rubber (Oct) 🎔	77.25p	-0.60
Rubber (Nov) 🛡		-0.50
Rubber (KL RSS No 1 Sep)	334,5m	
Coconut oil (Philippines)5	5570w	+8
Palm Oll (Malaysian)	\$440s	
Copra (Philippines)5	\$365x	
Soyabeans (US)	\$208y	-0.70
Cotton "A" Index	58.55c	+0.70
Wooltops (64s Super)	630p	
E a conno uniose otherwise c-conte/lb. r-ringgll/kg. y-Se p-Sep/Oct. w-Oct/Nov. †Mes age fatatock prices. * chang	p. q-Oct. x-A: ii Commissio	ug/Sep. O <b>aver-</b>

TLondon physical market. SCIF Rotterdam.

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Dec Mar	848 824	850 834	864 846 843 820
May	830	847	852 628
لبال	838	858	862 838
Sep Dec	848 888	871 910	874 845 913 888
ICCO I	ndicator	ronac orices (SDF	xi 10 tonnes Rs per tonne). Dail
price k	or Aug 30	: 1049.98 (11	041.39):10 day awa
age fo	r Aug 31:	1075.58 (10	81.61)
COFFE	E Ertonne		
	Close	Previous	High/Low
Sep	1019	1001	1022 994
Nov	1032	1014	1035 1008
Jan Mar	1036 1021	1015 1004	1037 1010 1020 <i>9</i> 96
May	1018	1005	1020 996
Jly	1019	1007	1015 1001
Sep	1025	1015	
Turnov	or: 5884 (	5244) lots o	d 5 tonnés
Aug 3	indicator p	miles (US 0 Jajiy 108.53	sents per pound) to (109.17); . 15 da
averaç	e 108.50 (	108.32).	
			_
SUGAI	R (\$ per to	nne)	
Rew	Close	Previous	High/Low
Oet	238.00	235.60	237.80 230.00
Dec	239.00	234.00	236.00 231.00
Mar	233.80	228.80	233.60 226.60
May Aud	227.40 226.40	222.80 221.00	226.60 221.00 221.00
Oct	226.00	221.00	44 1,00
(hte	Close		High/Low
Det	257.00	260.00	257.00 249.00
Dec	248.00	256.00	250.00 250.00
Mer	253.50	<b>257.00</b>	253.00 248.00
May Aug	252.00 250.00	257.00 258.00	254.00 253.09 255.00
			lots of 50 tonnes
White 1	516 (714)		
Parus- V	Vhite (FFr	per tonnet:	Oct 1805, Dec 1585 95 Oct 1605
	, may 1		W OE 1003
046 C	L \$/tonne		<del></del>
ال سح	Close	Drondo:-	Lileta and
		Previous	High/Low
			129.50 127.50
	127.75 130 25	128.00 130.50	
Oct	130.25 132.60	128.00 130.50 133.25	132.00 129.75 134.25 132.00
Oct Nov Dec	130.25 132.60 134.75	130.50 133.25 136.00	132.00 129.75 134.25 132.00 138.00 134.25
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Oct Nov Dec Jen Feb Mar Apr Furnove BRAINS Wheat Sep Nov Jen Mar	130.25 132.50 134.75 132.50 129.75 127.50 127.50 127.50 127.50 127.50 127.50 127.50 127.50 13.50 105.35 110.26 113.00 115.50	130.50 133.25 138.00 132.50 130.25 129.00 128.25 2507 lota of Previous 107.85 109.75 112.85	132.00 129.75 134.25 132.00 138.00 134.25 133.00 132.25 131.00 129.50 127.50 129.00 100 toones High/Low 109.70 108.35 710.40 110.00 113.00 112.65
Miteut Sep Nov Jen Mar May	190.25 132.50 134.75 132.50 129.75 127.50 127.50 127.50 170.00 108.35 110.25 113.50 118.10	130.50 133.25 138.00 132.50 130.25 129.00 128.25 256) lota of 107.85 109.76 112.85 115.00 117.95	132.00 129.75 134.25 132.00 138.00 134.25 133.50 132.25 133.50 132.25 133.00 129.50 127.50 129.00 100 tonnes  High/Low 108.70 108.35 19.40 110.00 113.00 112.65 113.70 115.25 118.10 117.90
Oct Nov Dec Jan Feb Mar Apr Furnove GRABIS Wheat Sep Nov Jen Mar Mar	190.25 132.50 134.75 132.50 129.75 127.50 127.50 127.50 127.50 127.50 127.50 127.50 137.50 110.35 110.25 113.50 115.50 115.50	130.50 133.25 138.00 132.50 130.25 129.00 128.25 129.00 128.25 109.75 112.85 112.85 117.05 Previous	132.00 129.75 134.25 132.00 138.00 134.25 133.50 132.25 133.50 122.50 127.50 129.00 100 toones  High/Low 109.70 108.35 119.40 110.00 113.00 112.65 119.70 119.25 119.70 119.25 119.70 119.25
Oct Nov Dec Jen Feb Mar Apr Furnove BRAINS Wheat Sep Nov Jen Mar	130.255 132.50 134.75 132.50 129.75 127.50 127.50 127.50 127.50 13.00 115.50 111.50 111.50 111.50 111.50	130.50 133.25 138.00 132.50 130.25 129.00 128.25 256) lota of 107.85 109.76 112.85 115.00 117.95	132,00 129,75 134,25 132,00 138,00 134-25 133,00 132-25 131,00 129,50 127,50 129,00 100 toones  High/Low 108,70 108,35 110,40 110,00 113,00 112,65 119,70 115,25 118,10 117,90  High/Low 110,00 101,75
Oct Nov Dec Jen Jen Mar Apr Furnove GRADIS Wheat Sep Nov Jen Mar May	190.255 132.50 134.75 132.50 129.75 127.50 127.50 127.50 108.35 110.25 118.10 Close 101.75 105.05	130.50 133.25 138.00 132.50 130.25 129.00 126.25 128.00 128.25 109.78 117.85 118.00 117.65 101.85 104.80 107.70	132.00 129.75 134.25 132.00 138.00 134.25 133.50 132.25 131.00 129.50 127.50 129.00 100 toones  High/Low 108.70 108.35 710.40 110.05 113.00 112.65 113.70 113.25 118.10 117.90  High/Low 102.00 101.75 105.10 104.85
Oct Nov Nov Jee Jen Jen Apr Furnove Sap Jen Jen Jen Jen Jen Jen Jen Jen Jen Jen	130.255 132.50 134.75 132.50 129.75 127.50 127.50 127.50 127.50 13.00 115.50 111.50 111.50 111.50 111.50	130.50 133.25 136.00 132.90 130.25 129.00 120.25 129.00 120.25 107.85 107.85 107.85 112.35 117.65 Previous	132,00 129,75 134,25 132,00 138,00 134-25 133,00 132-25 131,00 129,50 127,50 129,00 100 toones  High/Low 108,70 108,35 110,40 110,00 113,00 112,65 119,70 115,25 118,10 117,90  High/Low 110,00 101,75

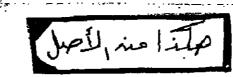
	CIUSE	LIGARORS	LIGITOW		Citos	8	LIGAIDER	LIGHTON		CHEN VALOCIDA	a Openime
SP GE	905	901	919 899	Alumink	m. 99.7	% ourity	(\$ per tonne)			Ring	turnover 100 t
DC	848	850	864 846	Cash	2780		2840-50		2780-80		
Ar .	824	834	B43 820	3 month			2775-85		2756-75	2740-60	9.063 lots
ay ii	830 838	847 858	852 828			<u> </u>					
HC)	84B	871	862 838 874 845	AUDIN	M,99.57	Pound (	£ per tonne)			Hing tu	mover 33,000 t
9C	883	910	913 888	Cash	1654		1677-82		1660-5		
ICECOM	- B2/12 /	7011) lets e	d 10 tennes	3 month	1568	-9	1581-2	1590/156	1584-5	1509-70	43,345 lots
CO I	ndicator	orices (SDF	is per tonne). Daily	Copper,	Grade A	(£ per to	nne)			Ring tu	mover 24,700 t
ice fo	r Aug 30	1049.98 (1)	041.39) :10 day aver-	Cash	1397	.0	1392-4	1398/139	3 1400-2		
je for	Aug 31:	1075.58 (10	81.61)	3 month			1365-6	1383/137		1372.5-3.5	62,990 lots
				Comper	Standen	d (E per t	cone)		•	- Bi	ng turnover 0 t
OFFE	Cronne				1330		1325-30		1330-40		
_	Close	Previous	High/Low	Cash 3 month:		-40 -30	1315-20		1320-40		36 lots
							-1				
D Q	1019 1032	1001 1014	1022 994 1035 1006			Tine Ounc					Aling turnover 0
nd na	1036	1015	1037 1010	Cash	650-2		651-2		640-3		
er er	1021	1004	1020 996	3 months	664-6	<u>-</u>	664-6		554-7	660-5	508 lots
۹y	1018	1005	1020 998	13) bead	er tonn	e)				Alng b	urnover 4,375 to
<i>y</i>	1019 1025	1007 1015	1015 1001	Cash	365-7		365-7		365.5-6		
PP_				3 months	371-2	2	370-1	378/369	371-1.5	371-2	11,069 lots
rnovo	r: 5884 (	5244) lots o	f 5 tonnes	Nickel (\$	per ton	ne)				Ring	turnover 770 to
CO 18	Comp t	MC85 (US 0	ents per pound) for (109.17); . 15 day	Cash		0-350	13100-200	_	13050-75	<u>_</u>	
orage	108.50 (	108.32).	(100.11), - 10 day	S months			12700-50	12850/127			7,107 tots
_		-									
IOA II	/2 t-			Zinc (i p						ming u	mover 8,850 to
	(\$ per to			Cesh	815-7		791-3	820/817	819-20 808-9		<b>64 600</b> 144
TW.	Close	Previous	High/Low	3 months	804.5	<u>~</u>	787-8	808/795	one-a	796-8	21,907 lots
2	238.00	235.60	237.80 230.00								
C	239.00	234.00	236.00 231.00	507470						TAL EXCHANGE	
ar By	233.80 227.40	229.80 222.80	233.60 226.60 226.60 221.00	POTATO	ES C/EO	ine .					
-, 19	226.40	221.00	221.00		Ciose	Previou	35 High/Low		Aluminium (S	9.7%) Ca	lla Puts
zī.	226.00	221.00		Nov	67.0	65.0	85.0 84.9		Strike price	\$ tonne Sept	Nov Sept No
riğe	Close	Previous	High/Low	Feb	76.5	75.6			2750		14
:	257.00	260 00	257.00 249.00	Apr May	95.8 105.8	98.1 107.0	96.8 94.7		Alimahikan (	99.5%) Ca	ils Puts
ic	248.00	256.00	250.00 250.00	_ <del>-</del> _							
LT .	253.50	257.00	253.00 248.00				f 40 tonnes,		2800	52	
ly .	252.00 250.00	257.00 258.00	254.00 253.00	SOYABE	AN MEA	L S/tonne			Copper (Grad	Se A) Co	lia Puts
g			255.00		Ciose	Previou	s High/Low		2300		115
move	r: Raw 2 516 (714)	2389 (1657)	lats of 50 tonnes,	Oct	171.00	169.00	171,50 168.	50	2350		36
na- W	inise (FFr	oer tonnel:	Oct 1805. Dec 1585,	Dec	179.00	176.00	180.00 179.	.00			
ır 158	5, May 1	595. Aug 15	85 Oct 1805	Feb	183.00	180.00					
				Apr	189,50	180.50	183.00				
S OR	. \$/tonne						20 tonnes.				
	Close	Previous	High/Low	FREGIT	FUTUR	28 \$10/ln	dex point				
					Close	Previou	s High/Low				
p t	127.75 130.25	128.00 130.50	129.50 127.50 132.00 129.75	Aug	1261	1261	1261 1261		TOKOON BI	ILLION MARKE	<u> </u>
v	132.50	133.25	134.25 132.00	Sep	1395	1383	1395 1385		Gold (fine oz)	\$ price	melaylupe 2
Ç	134.75	136.00	138.00 134.25	Oct	1505	1500	1510 1505		Close	423 4 -423 4	255-25612
n b	132.50 129.75	132.50 130.25	133.50 132.25 131.00 129.50	Jan Apr	1533 1570	1535 1565	1545 1583 1576 1566		Opening _	427 12-428	254-254-5
ŭ.	127,50	129.00	127.50	BFI	1272	1267	1975 (365		Morning fix Attention fix	428.3S	253,584 <sup>-</sup> 264,766
f	127.50	128.25	129.00	Turnover	221 (5)	<u> </u>			Day's high	430-430 <sup>3</sup> z	204.700
TOVE				TUTTION	-z , [3]				Day's low	426-42612	
		255) lota of	100 toones								
		250) lota of	100 toones								
	r 6580 (50	2607 lots of	100 toones	- wood							
	r 6580 (5 C/tonne			WOOL Australi	en wool	prices he	old fairly stend		Coins	\$ price	treinviune 2
APIS	r 6580 (50	Previous	High/Low	Australi this we	k but w	ith the cu	old fairly stead	the	Coins	\$ price	Inglaviupe 2
ent D	E/tonne Close 108.35	Previous	High/Low 109.70 109.35	Australi this wer Australi	ek but wi Billob an	ith the cu r g little t	rrency rate for selow its recen	the	Mapielaaf Britannia	442-447 442-447	263-266 263-266
ent D	E/tonne Close 108.35 110.25	Previous 107.85 109.75	High/Low 109.70 109.35	Australi this wer Australi peak in	sk but wi allob ca anihata	ith the cu r <u>e</u> little t terms Br	mency rate for selow its recen adjord price	the	Mapieleaf Britannia US Eagle	442-447 442-447 442-447	263-266 263-266 263-266
tent.	E/tonne Close 108.35	Previous	High/Low 109.70 108.35 110.40 110.00 113.00 112.65	Australi this wer Australi peak in adjustm	sk but wi an dolla aterling ants still textile:	ith the cu r <u>e</u> little t terms Br I tend to I situation.	rrency rate for selow its recent actiond price be reductions. at least in ear	the t The Ker	Mapielaaf Britannia US Eagle Angel	442-447 442-447 442-447	263-266 263-266 263-266 260-1 <sub>1</sub> -263-1 <sub>4</sub>
Pent V	E/tonne Close 108.35 110.25 113.00	Previous 107.85 109.75 112.85	High/Low 109.70 109.35	Australi this wer Australi peak in adjustm UK woo	sk but wi an dolla aterling ents still textile ing, is a	ith the cu r g little t terms Br I tend to I situation, iso depre	rrency rate for below its recent adford price be reductions. at least in ear assed by last w	the t The Rer	Mapielaaf Britannia US Eagle Angel Krugerrand	442-447 442-447 442-447 439-444 428-431	263-266 263-266 263-256 260-1 <sub>1</sub> -263-1 <sub>4</sub> 254-256
Pent V	F 6580 (5)  E/tonne  Close  108.35  110.26  113.00  115.50	Previous 107.85 109.75 112.85 115.00	High/Low 108.70 108.35 110.40 110.00 113.00 112.05 115.70 115.25	Australi this wer Australi peak in adjustm UK woo process rise in is	sk but wi an dolla sterling ents still i textile ing, is a nterest r	ith the cure a little terms Britend to I shugtion, less depresent	rency rate for selow its recent adford price at least in ear assed by last w prospects of F	the t The Rer	Mapleitati Britannia US Eagle Angel Krugerrand New Sov. Old Sov.	442-447 442-447 442-447 439-444 428-431 101-102 101-1021 <sub>2</sub>	263-266 263-266 263-256 260-1 <sub>4</sub> -263-1 <sub>4</sub> 254-256 60-60-1 <sub>4</sub> 60-61
P V O Ir	Cione 108.35 110.26 113.00 115.50 118.10	Previous 107.85 109.75 112.85 115.00 117.65	High/Low 108.70 108.35 110.40 110.00 113.00 112.65 113.70 113.25 118.10 117.90	Australi this wer Australi pack in adjustra UK woo process rise in is to come increase	ek but wi an dolla sterling ents still i textile : ling, is a interest r . The sk ed at a fi	ith the cu r g little t terms Br I tend to I situation, leo depre rates and ocknolding lime when	rrency rate for below its recent added price be reductions, at least in ear seed by last w prospects of Fig g burden is a there is alreas	the t The fier seks	Mapieloaf Britannia US Eagle Angel Krugerrand New Sov.	442-447 442-447 442-447 439-444 428-431 101-102	263-266 263-256 263-256 260-l <sub>1</sub> -263-l <sub>4</sub> 254-256 60-60-l <sub>4</sub>
p v n ir iy	E/torme Cione 108.35 110.25 113.00 115.50 118.10	Previous 107.85 109.75 112.85 115.00 117.85	High/Low 108.70 108.35 110.40 110.00 113.00 112.65 115.70 115.25 118.10 117.90 High/Low	Australi this wei Australi peck in adjustm UK woo process rise in it to come increase caution	ek but wi an dolla sterling ents still i textile : ing, is a nterest r . The sk ed at a ti in lookle	ith the current little to the country of the country of the country of the country of the current of the current little of the curre	rrency rate for below its recent actiond price be reductions, at least in ear steed by last w prospects of m grounden is there is sired. Activity is	the t	Mapleitati Britannia US Eagle Angel Krugerrand New Sov. Old Sov.	442-447 442-447 442-447 439-444 428-431 101-102 101-1021 <sub>2</sub>	263-266 263-266 263-256 260-1 <sub>4</sub> -263-1 <sub>4</sub> 254-256 60-60-1 <sub>4</sub> 60-61
P V O Ir	E/torme Clone 108.35 110.25 113.00 115.50 118.10 Close 101.75	Previous 107.85 109.78 112.95 115.00 117.65 Previous	High/Low  109.70 109.35  110.40 110.00  113.00 112.95  115.70 115.25  118.10 117.90  High/Low  102.00 101.75	Australi this wee Australi peak in adjustm UK woo process rise in it to come increase caution exceller	ek but wi an dolla sterling ents still i textile : ing, is a nterest r . The sk ed at a ti in lookir it in Wor	ith the current little it terms British to I tend to I tend to I sheet end to I tend t	rrency rate for below its rescale actions price be reductions at least in ear issed by last prospects of a g burden is there is alrea. Activity is ving but not up	the t	Mapleleaf Britannia US Eagle Angel Krugerrand New Sov. Old Sov. Noble Plat	442-447 442-447 442-447 443-444 428-431 101-102 101-102 <sup>1</sup> 2 542.3-548.8	263-266 263-266 263-266 260-14-265-14 254-256 60-60-14 60-61 321-25-325
p v n ir iy	Etionne Cione 108.35 113.00 115.50 116.10 Cione 107.95 107.95 107.95	Previous 107.85 109.75 112.35 115.00 117.65 Previous 101.85 104.80 107.70	High/Low 108.70 108.35 110.40 110.00 113.00 112.65 113.70 115.25 118.10 117.90 High/Low 102.00 101.75 105.10 104.80 108.10 107.75	Australi this wei Australi peak in adjustm UK come increase increase caution exceller capacity order by	ek but wi an dolla sterling ents stifi i textile: ing, is a nterest r . The sk ed at a 6 in locker it in Wor on the	ith the cu r a little to r a little to terms Br I tend to I situation, les depre- stes and ocknoidin- line when ing ahead, rated wea- woollen s resent an	rrency rate for hellow its rescribe actions price be reductions. at least in ear ssed by last w prospects of g burden in a there is aircal Activity is wing but not us lide, and shorts increasing the increasing the increasing the price of increasing the increasing the increasing incr	the t	Mapleitati Britannia US Eagle Angel Krugerrand New Sov. Old Sov.	442-447 442-447 442-447 439-444 428-431 101-102 101-1021 <sub>2</sub>	263-266 263-266 263-256 260-1 <sub>4</sub> -263-1 <sub>4</sub> 254-256 60-60-1 <sub>4</sub> 60-61
p v n ir iy	E/tonne Cione 108.35 110.25 113.00 115.10 Close 101.75 105.00	Previous 107.85 109.78 112.85 115.00 117.65 Previous	High/Low  109.70 109.35  110.40 110.00  113.00 112.95  115.70 115.25  118.10 117.90  High/Low  102.00 101.75	Australi this wei Australi peak in adjustm UK woo process rise in is to come increase cautioli capacity order by to comb	ek but wi an dolla sterling ents still i textile: ing, is a nterest r . The sk ed at a d in lookdr r in Wor on the poks rep ing and	ith the cu  r a little t  terms Br  I tend to I  situation, lise depre  rates and  ocknodin, lime when  ig ahead,  sted wea  woollen  fesent an  spinning	rrency rate for below its rescale actions price be reductions at least in ear issed by last prospects of a g burden is there is alrea. Activity is ving but not up	the t	Mapleleaf Britannia US Eagle Angel Krugerrand New Sov. Old Sov. Noble Plat	442-447 442-447 442-447 443-444 428-431 101-102 101-102 <sup>1</sup> 2 542.3-548.8	263-266 263-266 263-266 260-14-265-14 254-256 60-60-14 60-61 321-25-325

	(Prices suppl	iled by Amalga	mated Metal Tr	ading)	US	MA	RKE	TS
	AM Off	cial Kerb cto	se Open Int	erest	. – –			
		Riz	ng turnover 100	tonne	No	- V	ork	
	2780-80	<u> </u>				-	VIR	
	2756-75	2740-60	9,063 lot		GOLD 1	00 troy	02.; <b>\$/</b> (r0y (	9Z.
	<u> </u>	Ring	turnover 33,000	tonne		Close	Previous	High/
	1660-5				Sep	431.3	428.8	429.3
į	1584-5	1569-70	43,345 lo	<u> </u>	Oct	434.1	431.9	434,8
	_	Ring	turnover 24,700	tonne	Nov Dec	437.0 438.9	0 437.7	0 440.6
	3 1400-2	•	_			446.1	443.9	446,4
	1 1375-8	1372.5-3			Apr	452_1 458_1	449.9	452.7
			ling turnover 0	tonne		454.4	455.9 482.2	457.0 0
	1330-40 1320-30				Oct _	470.7	468.5	489.0
	1320-30		36 lots		PLATRE	UM 50 t	oy oz; \$/tro	y oz.
	<del></del>		filing turnover	D COSS		Closs	Previous	Нідыл
	640-3 654-7	660-5	508 lots			533.9	525.8	534.5
			turnover 4,375			539.2 544.9	531.1 687.1	540.0 542.5
	905.5.0	- HAIN	WHEN 4,375	ENK PE		551.6	543.8	0
	365.5-6 371-1.5	371-2	11,069 for	bs.	Oct _	558.6	550.8	0 .
			g turnover 770		SILVER	5,000 tn	by 02; cents	Vtroy o
	13050-78		A striken 110	- HIE		Close	Previous	High/l
į	750 12600-60		7,107 tota		Sep	655.5	649.0	657.0
•		Rine	turnover 8,650	tonne	Oct	661.4 668.2	655.0 :	Ο.
	819-20			<del></del> .		671.0	666.0	672.D
	808-9	796-8	21,907 loi		Jan 🗇	876.O .	670.1	0
						886.4 887.4	690,6 691.8	687.5 694.0
		741	E TRADED OFT	=	Jul i	708.5 719.5	703.3	704.5
						738.5	714.7 732.0	713.0 736.0
	Aluminium (S	<del></del>	alls Put				ibe; cents/i	bs
	Strike price	\$ tonne Sep	t Nov Sept N			Close	Previous	High/L
	2750			49		103.80	101,60	103.90
	Alizahilaa (		alis Pub	<u>-</u>		102.90	100.90	0
	2900	52_				101.95 101.00	0 99.50	6 101.50
	Copper (Grad	de A} C	alis Puti	<u> </u>		99.40	x98.15	98.15
	2300			12		96.40 93.60	95.20 92.90	95.75 93.50
	2350		36		Jul 1	11.30	91,10	91.10
						19.30 17.00	89.30 87.40	89.00 87.00
							bc) 42,000 U	
						Letest		High/L
						15.27		15.49
		JLLION MARK	=			15.34	15,38 15,43	15.56
						15.38 15.41	15.47 15.51	15.58 15.65
	Gold (fine oz	433/4-423/4	melavlupe 2		Mar 1	5.44	15.55	15.64
	Close Opening	427 2-428	255-256 <sup>1</sup> 2 254-254 <sup>1</sup> 2			15.62 15.60	15.59 15.67	15.62 15.70
	Morning fix Atternoon fix	426.35	253,564			15.67	15.71	15.80
	Day's high	430-430 <sup>3</sup> z	254.765		HEATIN	3 OIL 42	,000 US 44	lis, cent
	Day's low	426-42612				_atent	Previous	High/L
						1310	4314	4370
		A I	<u> </u>		Oct 4 Nov 4	1975 1460	4985 4437	4415 4490
	Coins	\$ price	2 equivalent	·	Dec 4	1525	4515	4575
	Mapieleaf Britannia	442-447 442-447	263-266 263-266			1585 1525	4576 . 4536	4615 4570
	US Engle Angel	442-447 439-444	263-266		Mar 4	375 -	4301	4420 4280
	Krugerrand	428-431	260 kg - 263 kg 254-256			1270 . 1160	4288 4181	4210
	New Sov. Old Sov.	101-102 101-102 <sup>1</sup> 2	60-60-¾ 60-61		Jun 4	H 15	4131	4115
	Noble Plat	542.3-548.0	321.25-325	-	ACCOC	10 tonne	e;\$/tonnes	
						Ciose	Previous	High/L
			<u> </u>			220	1290	1280
	Silver tix	p/line oz	US cts equiv			258 254	1312 1303	1379 1309
	Spot 3 months	384.10 396.00	545.80		May 1	258	1316	1320
	6 months	407.75	659.95 675.15			294 ·  215	1338 1360	1330 1350
	12 months	432.15	707.30			353 353	1396	1404
					• • •			

### 00 troy oz.; \$/troy oz. 428.8 431.9 0 131.3 134.1 137.0 139.9 146.1 152.1 158.1 154.4 170.7 M 60 troy oz; \$/troy oz. High/L 8 531.1 637.1 543.8 550.8 5,000 tray 02; ce 955.5 961.4 968.2 971.0 96.4 97.4 96.5 19.5 666.0 670.1 690.6 691.8 703.3 714.7 732.0 25,000 lbs; cents/lbs 18.80 12.90 01.95 01.00 9.40 1.40 3.60 1.30 9.30 7.00 99.50 x98.15 95.20 92.90 91.10 89.30 87.40 15,38 15,43 15,47 15,51 15,55 15,59 15,57 15,71 Oil 42,000 US galls, cents/US galls 4314 4965 4437 4515 4578 4536 4381 4285 4181 4131 1280 1312 1303 1316 1338 1390 1398

T							· .		
COFE	<b>在</b> -C" 37	,500ths; cer	nts/lbs		SOY	SEAN NE	AL 100 tons,	\$/ton	
	Close	Previous	High/Los	· _		Close	Previous	High/Low	******
Sep	123.25	120.90	123.50	119,00	Sep	266.7	264.7	267.5	263.0
Dec	123.83 122.75	121.17 120.13	124.25 122.75	120.00 119.10	Oct	265.2	262.5	265.5	261.0
May.	122.50	120.13	122.75	119.0T	Dec Jan	264.2 262.2	281.6 258.7	265.0 263.5	259.9 268.5
ألنال	122.25	119.88	122.25	119.40	Mar	258.2	255.2	259,0	255.0
Sep Dec	119.88 120.01	118.75 118.50	17 <b>9.00</b> -	118.75 0	May	254.0	250.0	254.0	250.0
		**** 112,0			- Jul Aug	250.0 238.5	245.0 235.0	250.0 238.0	246.0 239.0
		<del></del> _				E 5.080 bu	min; cents/5		
	· Ciose		-High/Lov		. ===	Close	Previous	High/Low	
Oct Jan	10.25 9.47	10:15 9.22	10.29 9.60	9.89 9.60	Sep	288/0	279/0	283/2	278/0
Mar	10.27	10.09	10.28	9.81	- Dec	296/4	290/6	297/0	255/0
May	10.00	9.80 9.85	10.00 9.84	9.65 9.50	Mar	300/4 302/2	294/2 .	301/2	291/4
Oct	9.68	9.46	9.60	9.35	May Jui	299/2	295/6 292/4	.302/4 . . 300/0	294/0 290/0
Jen	9.01	0	0.	0	Sep	281/4	<i>277!</i> 0	288/0	275/0
COTT	ON 50,000;	cents/lbs	-		Dec	270/0	264/4	272/0	265/0
	Close	Previous.	High/Low	7	WHE		min; cents/	60lb-bushel	
Oct	52.75 ·	53.81	53.93	52,70	_	Close	Previous	High/Low	
Dec Mar	61.60 61.70	52.22 52.13	52.54 52.40	51.55 51.60	Sep Dec	<b>39</b> 7/4 415/6	395/4 414/8	398/0	393/0
May.	51.75	52.23	52.60	51.75	Mar	418/2	417/2	416/0 419/0	411/0 418/0
Just Oct	52.25 53.15	52.55 · 53.65	52.60 68.35	S2.15 53.10	May	301/D 384/4	390/4	394/0	390/0
Dec	53.25	53.95	54,15	53.25	Jul		368/0	366/0	36170
ORAN	OE JUICE	15,000 R#s;	cents/fbs		LIVE		,000 ibs; cen	ts/ibe	
	Close	Previous	High/Low	, ,	-	Close	Previous	High/Low	
Sep .	191.00	191.70	193.80	190.70	Oct Dec	71.77 72.50	72,40 72,77	72.17 72.87	71,57 72,22
Nov	183.60	183.05	184.30	182.70	Feb	73.40	73.42	73.55	72.82
Jan Mar	173,40 170,50	173.25 170.20	173.70 T70.90	172.80 - 170.00	Apr Jun	74.87 74.10	74.97 74.27	75.30	74,65
May	169.25	168.65 ·	169.00	169,60	Aug	71.50	71 <u>-50</u>	74.50 72.00	73,80 71,40
Jul Sep	167.75 166.70	167.30 165.30	167.50 0	167.50 0	Sep	71.25	71.25	0 .	D
Nov	166.70	185.30	Ö.	ŏ	Oct.	71.10	71.05	71.10	
Jan	188.70	186.30	₽:	O	LIVE		0 lb; cents/i	<u> </u>	<u> </u>
						Close	Previous	High/Low	
		·			Oct Dec	38.55 41.20	39.15 41.82	39.35 42,17	38.47
Ch	icage	D .	٠.	·	Feb	43.42	44.37	44.25	41.15 43.20
		<u> </u>			Apr Jun	42.82 47.27	48.60 47.75	43.75 . 47.90	42.60 47,27
SOYAL		00 bu min:			Jul	48.20	48.70	48.90	45.20
. <del></del>	Ciose	Previous	High/Le		Aug Oct	47,02 44.05	47.02 44.58	47.25 45.10	6 43.50
Sep Nov	854/4 . 867/4	. 847/0 859/2	85670 889/4	841/4 854/4	PORIC		8,000 lbs; ce		
Jen .	874/4	- 867/0	877/0	. 862/0		Close	Previous	High/Low	
Mar May	878/2 870/0	868/4 867/4	880/0 870/0	864/4 858/0	Feb	48.90	-50.87	51.70	48.67
Jul	859/4	849/2	860/0	848/0	Mar	48.25	51.25	52.10	49.25
Aug	840/0	826/0	840/0	823/0 -					
2074	TAN OF	60,000 lbs:			-				<del></del>
	Close	Previous	High/Le		11		LUGAN		'. I
Sep	26.85	28.27	26.56	26.10	1 (		SINESS (		1
Oct	27.15	26.67	27,17	25.70 26.45	1 1	106 PM	ancial Times dish this sur	NON GUS. DLODONCE TO	ı
Dec Jan	27.67. 28.00	27,21 27,50	27.70 28.00	27.05 27.35	1 1	Mond	av 17 Octo	her 1988	
Mer	26.46	27.75	25.48	27.75	1 1.	LUGAN	of the contract of the contrac	e second IATIONAI	, }
May	28.65 28.40	25.00 27.75	28.76 28.50	27.90 27.75	1 1	BANE	ING SYM	POSTUM	<b>-</b> }
Aug_	27.55	27.32	28.00	27.85	1 1	For a fi	ill editorial P	monels and	- 1
					1 1	<b>ECVERTISE</b>	ent details, p	donic contac	E
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		· · ·			1 1	(SWI	TZERLAN , roe du Ce	D) LTD	
MOK	<b>.84</b>	1			11.		281 GENE		- 1
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7		Aug 29	muth ago				or atricia Sun	t de cie	[
	1687.6		1887.7	1659.5	1 1.	FINAN	CLAL TIN	IES LTD	- 1.
DOW.	JONES (B	ase: Dec. 3		100)			Bracken Ho	ase.	.}
Spot		132.73	<del></del>	127.50	. 1 1.		) Camee S Bdor EC4P		. 7
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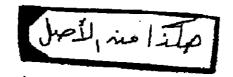
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#### **WORLD STOCK MARKETS**

	AUSTRIA	- FRANCE	GERMANY (continue)	NETHERLANDS (coolings)	SWEDEN teactional)	l <u></u>			
	August 31 Sch + er — Cretkunstalt 2,000 H5 Society 2,866 -10 Interestall 11,540 +20 Inspire later 7,540 +20	August 31 Frs. + or -	August 31 Den. +er-	(August 33 Fis. + er-	Assest 31 Kroser + pr -	CANADA			
¥.	Intervalii	Actor 431 +10 Ar Lieide 594 -2 Alcate 790 -10 Bit 790	Hecchst	Ommeren (Van)   28.10   H0.6	Stop Emblide				
CLIN C	188   12   198	Bongrain	) Kloeckser Werter (10).	Pathors	Volvo B Gree)	Sales Stock High Low Close Chap	Sales Stock High Law Close Chag 1000 Con Bath A \$15\(\frac{1}{2}\) 15\(\frac{1}{2}\) 15\(\frac{1}{2}\) 15\(\frac{1}{2}\) 15\(\frac{1}{2}\) 7\(\frac{1}{2}\) 7\(\frac{1}{2}\) 7\(\frac{1}{2}\)	Subs Steek High Low Class Chap 19854 Ipsoc 518 4 18 4 18 4 400 Naco A 7 513 2 13 2 13 2 - 1	### ### ### ### ### ### ### ### #### ####
10 E	August 31 Frs. + sr -	Che Bancaire 40 3 Cle Bancaire 20 420 Cle Fin. de Sozz 271 41	Inthiam	Rofileco 87.70 +0.1 Roresto 57.80 -0.1 Reyel Dateh 227.80 +2 Uniker 109.70 +0.5 VMF Stork 20.60 +0.1	August 31 Frs. + er -	TORONTO 2pm prices August 31	1325 Casum Gen \$24 257, 237, 457 Corby A \$194, 194, 194,	200 Jannack \$15% 16% 15% 15% 200 Kerr Add \$18% 18% 18% 18% 18% 2	400 Rehman A   \$17 kg 17 kg 17 kg — kg 5429 Renisance \$13 kg 13 13 kg + kg 18100 Repap   \$12 11 kg 12 + kg
The second	8,8.1 2,665 H5 3,900 Bark tota, a Lox 13,200 H64art 8 11,200 H75 2,000 H75 2	Coffiney 287 42 65 313 48 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Merceles Hid	Rigid Detail 27.79 42.   Unitser 1970 40.5 1970 40.5 1970 40.5 1970 40.5 1970 40.5 1970 40.5 1970 40.7 197	Algosiste	Contations in conts unless marted 8.  1475 AMCA Int. 476 479 479  1500 Acidenda \$154 154 154	1700 COSCAR 3510 9 10 1700 COSCAR 3510 9 10 17197 Crownx A	27980 Lebett 521 5 21 5 21 5 6 6 6 18800 Lec Merts 533 5 21 5 13 5 15 5 5 6 1 18800 Lec Merts 533 5 21 5 21 5 21 5 27 5 27 5 Lebets 4 316 5 16 5 16 5 16 5 16 5 16 5 16 5 16	33 Rio Algom \$21 iz 21 iz 21 iz 435 Rogers B : \$22 iz 52 iz 22 iz 4 iz 1000 Rothman 544 iz 44 iz 44 iz 1000 Rothman 544 iz 43 iz 41 iz 11
	COSTOL   8,600  -700	Esster 2,303 -25 Ges.Occidentals 700 -7	Porsche 561 -4.8 - Pressig 171 -1 Ratele West Elect 226 +0.7 Rassellari 239 +12	HORWAY	de (P4CS) 2125 -10 Credit Salsse 2500	9100 Agmico E \$15½ 15½ 15½ 1½ 9068 Albrita En \$16½ 15½ 15½ 1½ 1½ 18500 Albrita N \$15½ 14½ 15 267325 Alban \$384 374 374 15	2002 Delian 212 114 12	16100 Lawrent A \$13 <sup>3</sup> 2 13 <sup>1</sup> 2 13 <sup>1</sup> 4 + <sup>1</sup> 2 1300 Lookey Go 512 12 12	149625 RyTrco A \$15½ 15½ 15½ 1½ 12981 SHL Syst 37½ 7½ 7½ - ½ 200 SNC A ( 57 7 7
	Alii   Commonweal   Alii	Hores	Resealfield	Ater 31 Krewer + 6r - 42.5 Borgers Back 1113.00 +0.5 Borgers B 297.00 +4 Caristiania 8k 104.00 +4	Fischer (Geo.)	267395 Alcen 538 5 37 6 37 6 - 12 25720 A Barrick 521 5 21 5 21 4 + 12 600 Alcen if 53 6 36 4 56 4 1 100437 BCE Inc 536 5 36 1 56 5 1 12465 ACF II 546 5 36 36	800 Dicision A 1 36½ 5½ 5½ 5½ 71779 Disson 52½ 28½ 28½ 28½ 14 ½ 40872 Dome Pets 140 136 1394 1 14 D Tentile 515½ 15½ 15½ 6300 Domter 512½ 12½ 12½ 12½ 16 650 Die Pent A 510½ 16½ 28½ 14 655 Dries A 510½ 10½ 28½ 14	800 Lumonics 440 440 440 - 10 100 MDS A \$55½ 25½ 25½ 25½ 25 200 MDS B \$25 24 3 474 - 1 21000 Mac senate 430 426 430 31000 Mac senate 50 426 430 1000 Macmilan H X \$11½ 11½ 11½ 11½ 1 1008 Macmilan \$18½ 18 18¼ 1½	11100 Sd. ComA f S11% 11% 11% 700 Samuel MT 316½ 16½ 16½ 240 Saskold 30% 9½ 9½ 7600 Sceptro 405 400 400
8 X 8		Legrand	Veta  235.5	Den Horske Credit 90.00 xr -1	Jelmoli	Contrations in cools unless marked 8.  1475 AMACA int 475 470 470  1550 Ahilbhi Pr 2004; 2014; 2014; 1010 Action of 5154; 154; 2014; 1510  9100 Action of 5154; 154; 154; 154; 154; 154; 154; 154	100 0-101 107 107 107	State transmine vi sich ich ich ich ich	250 Scot Paper \$17 17 17 + 1 <sub>2</sub>
	Marie   1,630   425   1,630   425   1,630   425   1,630   425   1,630   1,63	Michigan P	Verela-West 335 -1 Voltamper 244.5 -1.8	Korrer 219.00 +3		879636 Bk NScot \$14 135 137+ 1 700 Baton \$13-2 135-2 135-2 1 80286 Balmorel 201 160 100- 1	3630 Echo Bay 322½ 22½ 22½ 20 Emos 513½ 13½ 13½ 13½ 20 Emos 513½ 13½ 13½ 13½ 13½ 240 Enfect 57½ 7½ 7½ 7½ 7½ 12500 Enfect 57½ 7½ 7½ 7½ 7½ 12500 Enhrois 522 21½ 21½ 1½ 12500 Flenbrois 522 21½ 21½ 1½ 15½ 3800 Fed Pion 512 11½ 11½ 11½ 12500 Fed Pion 512 11½ 11½ 11½ 11½ 12500 Fed Pion 512 11½ 11½ 11½ 11½ 11½ 11½ 11½ 11½ 11½ 1	1 Mark Res 39 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	25526 Seegram \$56 \ 6512 652 + \ 14180 Seere Can \$12 \ 12 12 9823 Seikirk A f \$23 \ 23 \ 23 \ 23 \ - \ 2
OK (Pri	So: Ean Belge 4,060 Solina 11,900 -25 Solina 12,450 Stampick latt 80	Parisos 400 0 Persod Ricard 1.025 -5 Person 933 +3	August 31 Lieu + sr -  Banca Cons is	North Outs	Sandor (847	600 Bounder B \$11 \text{is} 11 \text{is} 17 \text{is} = \text{is} 17702 Bow Very \$15 \text{is} 13 \text{is} 13 \text{is} 15 \text{is} \text{is} 25 \text{is} 26 \text{is} + \text{is}	\$4550 FPI Let 881, 65, 81, 4 t, 12500 Flenbrog 522 21 t, 21 t, -1; 1584 Feel lad A \$161, 164, 164, 164, 164, 164, 164, 164,	200 Munnova \$20% 20% 20%	2400 Scroms 350 350 350 1500 Southam \$201, 201, 201, 1
ŭ <sub>b</sub>	Tractabel 81.40 +50 UCB 9,030 +50 Wagons Lits 5,510 +30	Perspect S.A. 1138 -6 Printengs Au 539 +114 -120 Radiotech 734 +20 -60 Reducte 2,820 -60 Rousel-Uctaf 1,229 -10	CR 5,399 -66 - 1,199 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	SPAIN August 31 Pts.% + ar -	540   780   580	4520 BC ForP \$1812 1812 1815 . 61850 BC Res 94 92 94+ 3	1000 Finning L. \$22 22 22 800 Ford Code, \$120 120 120	14000 Mins Corp 3-53 335 335 - 5 650 Motson A ( \$25\\\\225\\\\225\\\225\\\225\\\\225\\\225\\\\225\\\\225\\\\225\\\\225\\\\225\\\\225\\\\225\\\\225\\\\225\\\\225\\\\225\\\\225\\\\\225\\\\\225\\\\\225\\\\\\	829 Spar Aero ( \$19% 19% 19% 19% 5900 Sterming A ( \$30% 30 + 12 746) Salico A \$23% 23 23% 23 12 2053 TCC Bev \$712 7% 7% 12+ %
	PERMARK August 31 Kr + er - Baltica Hides	Perspect S.A.   1138   -6     Perspect S.A.   1138   -6     Printerpa An   590   +14     Radiotech   734   +20     Reducte   2,220   -60     Rouse-Octaf   1,227   -10     S.Gobala   466   +0     Sciling   393   +1     Suis Rousignol   1,005   +6     Telenach Elect   4,405   -1     Tental Parasias Pr.   326   -3     Valen   144   144     Perspect S.A.   138   138     Perspect S.A.   138   138     Perspect S.A.   138     Perspect S.A.	Malcomenti   110,100   900   La Rinaccente   4,303   -27   Mastadisco   1,806   -44   Olivetti   10,020   -70	Akazar 640 640 1,065 20	Series Reiner	73100 CAE \$91, 91, 91, 174	3500 Franco o 351 <sub>5</sub> 81 <sub>9</sub> 81 <sub>9</sub> + 1 <sub>5</sub> 2505 GW URF \$241 <sub>6</sub> 241 <sub>5</sub> 241 <sub>5</sub> 1700 Galantis \$51 <sub>6</sub> 51 <sub>7</sub> 51 <sub>7</sub> 61 <sub>8</sub>	1792 NewTel Ent 517 164 17 + 19	13977 Tech B ( \$15½ 18 15½ + ½ 200 Tein Met \$16½ 16½ 16½ + ½ 106 Terra Min 72 72 72
u.	Carithery 1000.2 +43.8 Cop Handelshenk 254.5 +43.4 0. Sektor lah 110.2 +13.7	Thompso (CSF) 175 -1 Total-Petroles Pt. 326 -3 Valeo 500 44	Boston Hallano   1,199   -66	Alexzer	SOUTH AFRICA August 31 Rand + or -	1700 Cambridg \$25 \ 25 \ 26 \ 25 \ 125	600 Gendle A 5181g 181g 181g 181g 1 400 G Tratco p \$22 22 22 - 1g 250 Glamie 880 880 880 1	1950 Noranda F \$14½ 14 14½ 104739 Noranda \$22½ 22½ 22½ 1 938 Noran \$20 19½ 19½ 1 746 Noran & \$17 14½ 17 4	18125 Texaco Can \$381 <sub>2</sub> 381 <sub>8</sub> 381 <sub>2</sub> + 1 <sub>4</sub> 8380 Thoma N A \$271 <sub>4</sub> 261 <sub>8</sub> 27 + 1 <sub>9</sub> 147925 Ter Om 82 \$341 <sub>9</sub> 33 341 <sub>9</sub> + 1 <sub>2</sub> 310 Ter Sun \$221 <sub>8</sub> 22 221 <sub>9</sub> 1 <sub>9</sub>
	100.2   45.8   25.6		NETKERLANDS	Dragados	Abercon   2.45   10.75	300 CLI ST 30-2 0-9 5-2 1800 Cambler 5144 144; 144; 144; 149; 1700 Cambler 525 42 125 125 17400 Cambler 525 120 125 1540 Camp Saup 125 120 125 1540 Camp Saup 1774; 1774; 174; 14 4000 C Nor West 5124; 124; 124; 124; 14 4000 C Nor West 5124; 124; 124; 125; 127 78200 C Expan 1 105 105 105 118859 CI Bit Com. \$244; 234; 24; 14	200 Gradon A 1 \$10 10 10 29950 Granges 450 450 455+ 5 1200 GL Group '\$17 17 17	1805 NC Oils \$18% 18% 18% + 18 65817 Nor Tel \$21 5 21 5 21 5 4 6 51200 Northget \$85 6 6 6 6 6	310 Tor Sun \$22\frac{1}{2} 22 22\frac{1}{2} \frac{1}{2} \frac{1}{2
. <b>V</b>	Balcia Hidgs 507.3 -1. Cartibery 100.2 -65.8 Day RandelShank 254.5 +1.4 D. Seiden-Ed. 109.2 +1.7 Des Dausite Bank 365.7 tr +0.4 Bast Adetific 29.7 +0.9 SAT Holding 199.1 -15.9 SAT Holding 199.1 -15.9 System 645.2 -12.3 Jude Bank 253.7 -3 Jude Bank 253.7 -4.7 Soptus Borendess 256.5 -4.7 Soptus Borendess 256.5 -4.6 Sapertific 2658.1 +66.2	GERMANY August 31 Dm. + sr	Acrinoiding	hericaro	Allied Tech	3482 C Occionad \$15-1, 1		900 Noverco \$115 115 115 125 28500 Noverco W \$151 151 151 + 1 11550 Number \$101 10 10	27800 Trizec A ( \$33 ½ 33 ½ 33 ½ %
A FIF	FINEARD Amest 51 Mbs + or -	Alliazz AS 1,506 +4,5 BASF 260.5 -0.5 Bayer 290.2 -0.8	ACF Holding 48.50 +0.5 AEGON 81.60 +1.7 Aloid 182.90 +1.9 ARM 41.90 +1.9 ARM 41.90 +0.2 AMEV 50.00 +1.1 AMED 72.70 +0.6 Bushnam-Tet 52.90 +0.9 Dordische Petroleum 210.00 +0.2	SWEDEN August 31 Kroner + or -	9uffels 50.75 +0.5 CIM Galfo 5.35 Corrie Finance 3.25 De Beers 36.85 Driefoutels 51.75 -0.25	4150 Center \$25 245 25 + 14	1005 Greyhada 5235, 23 23 - 72 40725 Guif Rea 5775, 2775, 2775, 2776 2200 Hairy 254, 65, 64, 64, 64, 1775, 1		70 LIAP A \$13\(\frac{1}{2}\) 13\(\frac{1}{2}\) 118102 Unicorp A \$8\(\frac{1}{2}\) 7\(\frac{7}{2}\) 7\(\frac{7}{2}\) 700 UnigaceB 1 365 365 + 5 194 Un Carbid \$19\(\frac{1}{2}\) 18\(\frac{1}{2}\) 18\(\frac{1}{2}\) 18\(\frac{1}{2}\)
MA MARIA MARIA	Amer   198   +0.5   +0.5   +0.5   +0.5   +0.5   +0.2	Bayer-Hype	Bersum  Webry   100.00   +1.5	364 B = 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	First Nat. Bank	225 Carin A 5137; 179 179 79 225 Carin A 5137; 179 179 179 2150 Carina 5137; 174 174; 174; 174; 175 2150 Carina 5224; 254; 254; 254; 45 600 Calanese 5254; 25; 254; 45 100 Can Capital 5134; 174; 174; 17	2512 Horsham I 5312 512 512 12 2512 Horsham I 5312 512 512 12 2513 H Rev Co 51614 1814 1814 1	2500 Pourin A ( \$8% 8% 8% 4% 4 200 Paucan P \$24 2 24 24 2 4 11150 Peopuna \$15	1996 U Emprise 59% 9% 9% 50304 Varity C 350 345 345 2600 Viceroy R 57% 7% 7% 4
5	COP	Construction	Elsevier Nds 57.00 +0.5 Folter 31.70 +1.6 Gist Brucades 37.40 +0.9 Heiselses 144.60 +0.4	Electrolex B (Free) 234	OK Bazzars	2000 Centlap A 384 84 84 85 2200 Centled A \$7 7 7 + 1 200 Cheran 310 365 305 5	13804 (map DN A 353 % 53 % 53 % + 3	SSSO Pulsori A f \$18 1515 18 + 12 21355 Ploneer M 574 714 - 15 57022 Placer Dm \$157, 1515 1516 1516 1516 Poor Pet \$70 157, 1516 1516 1516 1516 Poor Pet \$70 157, 1516 1516 1516 1516 Poor Pet \$70 157, 1516 1516 1516 1516 1516 1516 1516 151	3000 Videotrn I \$117, 11%, 117, 117, 1900 Wajar A \$11%, 115, 11%, 174, 12, 677 Woosat E \$17 167, 17 + 1, 500 Weatmin \$10 10 10
<b>S</b> E 4	Polyola B'	AEE	ACF Biolding 48.50 +0.5 ACF Biolding 48.50 +0.7 Abold 182.90 +0.1 Abold 182.90 +0.1 Abold 182.90 +0.1 ACF 182.	Electrolies & Greek   224	Rest Plat	8100 CHINA B 1 517½ 17¼ 17¼ 11350 Chengler 512½ 12½ 12½ 200 Co Steel 1 515½ 15½ 15½ 34418 Company 518½ 15½ 15½ 15½ 100 Computog 58½ 5½ 5½	1900 kmopac 59 % 9% 9% 9% 96% 96599 kmor City \$20% 19% 19% 20 + % 19% 20% 10% 10% 10% 10% 10% 10% 10% 10% 10% 1	7000 Powir Cent 512's 12's 12's 14's 500 Powir Fin 514's 14's 14's 14's 14's 1500 Powir Fin 510's 10's 10's 10's 110's 1	2000 Weston SS2 % S2 ½ 32 ½ 200 Xerox Can S17 % 16 ½ 16 ½ [-No voting rights or restricted voting
	Speciasser 6 221 48.5 BBFC 12.25 40.15 Utd. Paper Pvf. 122 41.5 Wartsila (s.11) 203.5 43	Senter   270   12   13   14   15   15   15   15   15   15   15	KMP 163.5 +1.8 Naz Med Cert 62.20 +0.9	Saab-Scania B Free   180	Sage Holdings	um resilibitios 30-5 5-5 5-5	218750 (net Thom \$13 <sup>1</sup> s 13 <sup>1</sup> s 13 <sup>1</sup> s + <sup>1</sup> s 100 law Grp \$13 <sup>1</sup> s 13 <sup>1</sup> s 13 <sup>1</sup> s - <sup>1</sup> s	57950 Ranger 571 <sub>2</sub> 71 <sub>4</sub> 71 <sub>4</sub> - 1 <sub>4</sub>	T Figure 2.

mest 33.		•			:	<u> </u>				•		AUSTRALIA (conti	90ED	
	Yes .	+ er –	August 31	Yes	+==	August -31	Yes	+ ##	August 31	Yee	+#=-	August 31	Aust\$	+ ec -
Rigges Ales Electric	2,980.	H20:	Jeo	; [1,860	1-40	Nippon Lt Metal	799 1.920 608	H	Telija Teligija Cili	770	]	Klastom Gold	3,38	0.02
Riggeon Air	1770	110	Kalien	_ 1.426	J-10 .	Mispon Mest Pack Mispon Missing Mispos OH	.   1.920	<u>₹</u> o`.	Telkolo Oif	840	1 :=-	Lead Lease	14.45	-0.09
sta	17,740	-40 -10		1,750	180 150	Micros Oil	11 PB	13a ·	Tobishing	遗	-50 +10	Marge Hickies	190	1017
200	i 330	100	Kanebo	- 55	12	'   Rippon Road	1.160 698	30	Toto	2500 2500	-100	Has Aust Bank	6.A2	0.02
o Construct	760	1	Kancai Elect Power	3,000	- Ta	Nippon Satso	1698	+6 -20	Teksi Baek	2,320	<b>⊢40</b>	Heas	10.30	-0.05
491		+10	Kausai Palot	621	ΗZ	Rippon Setto	1700	<u> </u>	Tokal Carboo	590	L 250"	North Birn Hill	0.80 2.88	-0.07
d Corp blac Cil	920	+10	Kan Corp	<u>1,710</u>	+10 - (-30	Minor Shinos	line .	-8		2410	T26	Cakhridge	1622	1
hi Chemicals	5 <i>A</i> 70		Kanacaki Heav	1710	<u> </u>	Nippon Select Nippon Shimpon Nippon Shimpon Mippon Steel Mippon Steel Mippon Steel Mippon Steel	780 840 1_130	. <u>15</u>	Tokyo Electric Per	1,940 2,410 5,580	200 -200 -200 -200 -15 -15	Pacific Dunlop	179	0.64
hi Glass	1,880	-20	Kamasaid Heavy	- 689	126	Nippon Subsan	750 22.500	<del> 19</del>	Tolgo Electron	2900 1,190	1-20	Pleaser Cook	132	-āīis
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Hazeli	2.290 1.060	120	Mitsul Pagi Estate	2200	- 46	Stanley Electric	6.690 1.090	-30	B'ville Copper	100	ншв	Genting	8.45 4.94	+0.18 +0.06
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·	2000	<b>H</b>	Mitsel Warden	. 1928	l	Samitomo Brak	3,300	-15"	RHP	- 10	-0.00	Hong Leong Fin	256 130	408 4015 4045 401 4041 4041
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ni Taugh	1.000	i	Mizzeo Sporting Mochida Piterta Mortugo Milk	. (4,770	WILE .	3618000 E)63	1040 1460 769	- ·	CS2	.58 .50	-016	Makesa Utd ind	137	#001 
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icios	435	30 10	NSK Insulators NSK Spark Play	1236	+19 +39 -23	Sunitomo Realty Sunitomo Tr & Bk	1,340		Comulco 'A' 4	25		Characa Ale 3	297 1130	+0.03
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m Foods Nado u Electric	. 114.200 **	380	Milde Sec	出级	10	Taiche Phores	1.926	120	Coordinate Fielder	27				
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Foods	14,200 1,100	120	I Mikon Corp	は数·	-15 -20 -50	Talyo Fishery	1,926 518 1,880	20 12 10	Hardle (J)	20		NOTES - Prices on this p the individual exchanges	age ace as and are is	quoted o
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	0 2 823 2041	26 43 2017.4	25 2010.85	2158.61 2258.61	Low 1879,14	2722.42 (25/8/67)	-11.22 27/32)	AUSTRALIA All Ordinaries CL/L/ROD All Mining CL/L/ROD	1570.5 767.3	1580.5 777.5	1569.0 _770.8	1595.6 789.5	1657.8 (9)80 847.8 (9)80	1170.7 (10/2) 532.4 (10/2)
	.83 88		87.90 838.56	5/7) 11.25 10/3 908.45	20/1) 86.12 44/1) 737.57	.1101.16	12 12	AUSTRIA: Credit Akties (30/22/80	198.8	197.8	197.6	197.5	199.70 (17/8)	163.98 (11/2)
	1.42   849 1.64   178		1	5/7 190.82 (29/1)	22/D 167.26 20/0	04/8/87) 227/83 (22/1/87)	28/7/32) 10.50 28/4/32)	BELGIUM Branck SE CL/1/84	4879.2	4967.7	4857.4	4862.60	5043.1 (9/3)	3688.35(4/1)
1007's High 2052.63 (20	17.4B) Lav	2028.63 C	019.561		1			DENMARK Conestrages SE (3/1/83)	738.87	218.53	219.15	220.26	227.86 (3/8)	180.68 (4/1)
<b>-</b>		33   259.68	1 - 1	275.64 (22.6) 38.54 (22.6)	20/1) 20/1) 27/36	336,77 (25,8887) 393,17	0.6520 3.62	FINE AND Unites General (1975)	725,8	718.2	721.8	732.1	772.1 (8/6)	530.6 (15/1)
	.92 30). .00 25/			550	20/1) 21.51 20/1)	(2) (8) (8) (2) (8) (8) (8) (8)	(21)6/329 8.64 (1)10/749	FRANCE CAE General (31/12/82) Ind. Tendance(31/12/87)	347.7 131.8	347.6 131.0	347.1 130.5	348.2 130.3	368.5 (B/T) 137.6 (7/T)	251.3 (29/1) 89.7 (29/1)
Amer Mit. Value 294	1.66 148 1.91 295	05 293,87	243.21	155.95 (22)(4) 909.33 10)(4) 994.77 (18)(7)	136.72 (20/1) 262.76 (12/1)	187.99 (25/8/87)- 365.01 (13/8/87) 453.28	4.46 (25/4/42) 24.31 (9[12]72)	GERMANY FAZ Alejen (31/12/58) Comprershank (1/12/53) DAX (30/12/87)	484.33 1473.3 1165.56	481.95 1465.8 1165.73	476.67 1450.6 1152.38	478.65 1456.1 1157.65	495.78 (8/7) 1510.4 (8/8) 1199.% (5/7)	396.40 (29/1) 1207.9 (29/1) 931.18 (28/1)
LASDAQ OTC Comp _ 376			لبيا		22.77	706/8/877	CSI/20/725	HONG KONG Hang Seng Bank (33/7/640 pm)	2443.80	209.55	(4)	2464,83	2972.53 02/Tr	2223.56 (8/2)
Dow Industrial Div. Yie		3.79	3.73		3.51	2.5	<del></del>	ITALY Baeca Com, Ital (1972)	519.66	: 523.83	527.62	526.71	545,07 (18/3)	423.91 (9/2)
S & P Industrial div. yle S & P P/E ratio	dd	Aug 24 3,30 13.57	Aug 1 3.29 13.5	,	3,26 3,65	70 124 24 23.2	<b>5-</b> -	JAPAN*** Hitler (16/5/49)	27945-95 2128-92	2/511.65 2141.49	23379.10 2137.06	27565,41 2155,09	28423.38 (5/8) 2253.10 (2/8)	21217.04 (4/1) 1690.44 (4/1)
TRADING ACTIVITY	Miller	† Volce Ami 26	•	sens Trades	Ang	27 1.904	1.905	NETHERLANDS - AMP-CRS General (1970) AMP-CRS Inflatirial (1970)	264.2 224.1	263.6 224.7	262.8 224.1	262.6 223.3	284.8 (9/8) 239.3 (9/8)	205.7 (4/1) 157.9 (1/1)
Aug 30 ter York 100.72	App 29 99.6 7.7	no RELO	7 1 1	ides Falls Joshansad		33 915 38 474 56 517	-608	NORWAY Due SE 44/1/839	378.14	37L30	572.37	373.29	423.64 (ZLJT)	327.78 (28/1)
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CANADA	Aus		<b>~</b>	Am		1988	1	SOUTH AFRICA JSE Gold (28/9/78) JSE (substitut (28/9/78)	1243.64 1621.64	1246.0 1630.0	1947'0 1592'0	1258.0 1640.0	1451.0 C(7) 1758.0 (20/7)	1154.0 (4/5) 1387.0 (12/2)
Netab & Minerals	30 2897.6	29 2959.5	26 2927.9 3265.3	25 26/48.1 1253.9	1Hgt 3224.5 (5/7 3465.4 (5/7		1.7 (8/2) 7.9 (8/2) —	SPAN Madrid SE (10/12/85)	262.75	284.36	286.18	287.77	301.63 (15/6)	225.50 (A/I)
34130QDD	274.1				723.71.61		6 27/D	SWEDEN Jacobson & P. CS1/12/561	2965.5	2954.0	2935.3	2945.8	3112.90 (5/8)	2148.5 (4/1)
NEW YOR	K AC	TIVE	ST	ock:	<b>S</b> .			SWITZERLAND Swiss Bank Ind. (31/12/56)	549.9	- 553.1	55)1.8	556.3	559.0 G/63	464.6 (13/2)
	tods ·	Clocking C	hange Silly L. Kas		9	ocks Cless admi prio 84,800 111	<b>33</b> 44	WORLD M.S. Capital Intl. (1717)	<b>(a)</b>	433.8	433.6	95.3	46.2 (15/4)	401.0 (21/1)
44 Sta 1941	766,000 050,100	284 - 135 +		# # #	Y	84,800 11 37,500 46 78,600 13	ar	Saturday  A Subject to official year	August, 2	?: Japar	, Njikke)	27678.9	1 and TSE 2159.	58

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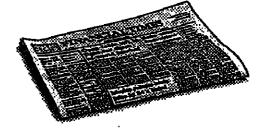
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FINANCIAL TIMES

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### See-saw session ends with slight decline by equities

ACTIVITY in the equities market remained subdued in fairly narrow range, while bonds at first reacted favourably to the rise in the dollar against the Japanese yen and then slipped back, writes Junet Bush in New York.

The Dow Jones Industrial Average ended a lacklustre day down 6.58 points at 2,031.65. Trading volume improved over the low levels of the past 10 days, with some 130m shares changing hands.

Equities had initially reacted positively to the higher dollar and early firmness in bond prices and gained 12 points at the opening. During the rest of the morning, however, the Dow drifted gradually lower and was down more than 10 points by early afternoon before rallying weakly.

Bonds also enjoyed a see saw day. After an early rise of as much a % point, bonds gave up half their gains by midsession only to recover by the close. The Treasury long bond rose a point on the day, to yield 9.303 per cent. This compares with a peak last week of just over 9.5

The bond market has per-formed fairly well since last week's round of co-ordinated interest rate rises in Europe mostly because of the ability of the dollar to bounce back from its lows. The US currency has made up a significant part of has launched an the ground it had lost against offer for the group.

the Bundesbank announced an increase in its discount rate

last Thursday. Yesterday, it was the turn of the Japanese yen to come under pressure against the dollar. By the close, the dollar was quoted at Y136.55, slightly below an earlier high of Y136.80 but well above its session low of Y134.80.

The yen has come under pressure because of repeated assertions by Japanese officials that they do not intend to raise the Japanese discount rate to match the rate increases in Europe last week. Officials said in Tokyo yesterday that it was part of the Bank of Japan's contribution to international policy co-ordination not to push up the discount rate.

Strength in the dollar against the yen is particularly healthy for US bonds because of substantial Japanese invest-

ment in Treasuries. Domestically, the main focus remains Friday's release of the August unemployment figures. These are expected to show an unchanged unemployment rate of 5.4 per cent and a rise in the non-farm payroll of around

Among featured stocks yes-terday was Macmillan which dropped \$1% to \$82 after the company said it had provided data about itself and its information service group to Maxwell Communications, which has launched an \$80-a-share

B F Goodrich rose a smart \$2 to \$53% amid rumours that Sir James Goldsmith or Hanson Trust might be preparing a Amdahl slumped \$4% to \$40

on the American Stock Exchange after Gartner Securi-ties and S G Warburg lowered their investment ratings on the stock and Warburg lowered its estimates of the company's 1988 and 1989 earnings. In over-the-counter trading.

Wilson Foods edged \$% lower to \$12% after Doskocil lowered the price of its tender offer for the company to \$12.25 a share from \$12.50 and also extended Digital Communications Associates dropped \$2% to \$25%. The company said that it expected net income for the

posted in the fourth quarter ended June 30. Blue chips were mixed. International Business Machines dropped \$1% to \$111%, General Motors was unchanged at

first quarter ending September 30 to be below the \$11.3m

Canada

AFTER a lower opening, shares in Toronto moved higher in the afternoon to close with a small gain in light trad-

Toronto's composite index finished up 11.7 at 3,285.8 with declines barely ahead of

### Falling yen drives Nikkei downwards in low volume

A WEAKER yen added further discouragement to equities yesterday, pushing share prices down in thin volume, writes Michigo Nakamoto in Tokyo. Even the announcement of

Nippon Mining's \$1.1bn agreed takeover bid for the US electronic materials group, Gould, had little impact. Nippon Min-ing rose Y28 to Y635 early in the day and was the fifth most active share with 13.8m traded, only Y1 higher at Y608.

For several days, equities have been suffering from investors' anxiety over the possibility of higher interest rates in Japan, as well as a marked lack of institutional participation prior to the end of the fiscal year for financial firms

on September 30. The Nikkei average, which had finished higher on Tues-day, failed to retain its modest strength and closed 145.70' down at 27,365.95. The day's high was 27,613.56 and the low

Volume at 414m shares was even thinner than Tuesday's 451m shares.

In London, Japanese shares dropped sharply, with the ISE/ Nikkei 50 index losing 24.09 to 1,763.15. Japanese equity war-rants also fell "quite dramatically," one trader said, amid worries over the speed with which the yen has been weak-

Shares turned down in Tokyo mainly on small-lot trading. Analysts said the recent pattern of share prices rising only to be sold for quick profits reflects a lack of commitment to the market.

No sectors showed any significant strength and only some speculative issues attracted buying interest.

machinery maker and non-ferrous metals company, was the third most heavily traded issue with 19.92m shares exchanged. It rose Y36 to a record high of 1664 in morning trading, but then closed Y10 down at Y618 on profit-taking. Rumours had been spreading that Furukawa would move its manufacturing out of its Osaka plant and rede-

Citizen Watch was another heavily traded issue, with 9.1m shares dealt. It moved up Y31

ter earnings forecasts.
Mitsubishi Oil was the most heavily traded issue at 30.87m shares, advancing Y10 to Y1,140 following persistent rumours that Saudi Arabia was interested in taking a stake.

The bond market recovered

modestly after falling in morning trading. Buying increased with the weakening of the yen against the dollar and the yield on the benchmark 105th gov-ernment bond finished at 5.360 per cent, unchanged from Tuesday's close. Trading in Osaka was again

lacklustre and volume fell further from Tuesday's 70.58m shares to 40.09m. The OSE average lost 36.52 to 26,408.45. Nankai Railways, the most heavily traded issue with 3.22m shares, lost Y40 to Y1,650.

Roundup

THE DROP in Tokyo unsettled Australia, but failed to discourage investors in Singapore or Hong Kong. Manila was in positive frame of mind and Taiwan recovered from its recent depressed trend.

AUSTRALIA saw very light trading as dealers looked over-seas for inspiration. With for-eign markets lacking direction and Tokyo sharply down, how-

kse values: Dec 31, 1986 — 100; Finland: Dec 31, 1987 — 115.037 (US \$ Index), 90,791 (Pound Sterling) and 94,94 (Local) Serviced. The Financial Times. Goldman. Sactor & Co., Wood Mackenzie & Co., Ltd.1987

ever, international concern about higher interest rates and rising inflation dominated trading and the index fell.
The All Ordinaries index lost

10 to 1,570.5. Total turnover was again light - only 88.54m shares, worth A\$125.05m.

Most leading industrials were down, with only Mayne Nickless, up 12 cents at A\$6.82, and Elders Resources, 10 cents better at A\$2.95, finding any support at the lower levels.

SINGAPORE survived a large fall in Tokyo, a small drop on Wall Street and late profit-taking to move upwards. The Straits Times industrial index added 16.38 to 1.036.59. Small investors were chiefly behind the rises, as institu-

tions avoided opening new

positions before Saturday's HONG KONG improved slightly in the face of continued bearish sentiment and declines in New York and Tokyo. The Hang Seng index closed 4.25 higher at 2,443.80. Turnover, at HK\$391.77m, was well down on Tuesday's figure. MANILA saw moderate traditional declines and the same declines are traditional to the same declines.

ing activity as dealers reacted positively to the return of President Corazon Aquino from a three-day state visit to Brunei. The Manila composite index closed 10.30 better at 786.15. TAIWAN recovered well from its recent decline as demand for industrial blue chips, banks and construction stocks pushed the weighted index up 207.10 to 7,680.48.

**SOUTH AFRICA** 

THE ABSENCE of significant news left Johannesburg drift-ing aimlessly and the market closed little changed. In the gold sector, Kloof gained 25 cents to R30.50, while Driefontein eased 25 cents to R31.75.

## Frenzied activity is mere memory in Israel

o say the Tel Aviv Stock Exchange is in the dol-drums would belittle the travails of those sailors who could often remain becalmed for weeks at a

With key national elections due in two months' time and the usual midsummer torpor



Tel Aviv

having well and truly settled in, there is little sign of inves-tor activity at present in Israel.

"The market is in trouble.
It's dead right now," said Mr David Tobias, securities manager at the Finance and Trade Bank, pointing to the low daily turnover. On one recent day, the equity market recorded only shekels 6.2m (\$3.8m) worth of transactions, less than a third of the daily average at 1987's end. The parallel bond market contributed another shekels 4.8m that day.

If was not always thus. During 1982 the exchange experienced a spectacular frenzy of buying comparable to the South Sea Bubble. In US dollar terms, industry shares rose on average by 158 per cent and average by 158 per cent and insurance companies tripled their market capitalization. The crash of October 1983, led by the banks, was equally spec-tacular: the all-share General index plunged 69 per cent in dollar terms and effective control of the country's major banks was taken by the Gov-By certain criteria, the mod-

ern, well-equipped bourse – its building was completed just before the 1983 crash – com-pares favourably with many around the world. By listed companies, Tel Aviv, with 271, is comparable to Kuala Lumpur or Mexico City; by equity and bond market capitalization of more than \$120n, it ranks on a par with Oslo. And in terms of new issues in 1987, Tel Aviv came 24th of the international federation of bourses' 35 mem-

Such league tables, however, can be deceptive. In reality, less than 25 per cent of the market capitalization is freely tradeable, and many of those 271 listed companies are tiddlers by any granderly. There dlers by any standards. There is little genuine takeover activity in Israel, most bids being

in the possession of the c trolling family or company. A crippling handicap for the market's growth is the severe restrictions placed by the Gov-ernment on the allocation of financial institutions' capital. Pension funds, for example, which rake in billions of shekels a year from hefty contribu-tions, are only permitted to invest 7 per cent of disposable funds in the equity market.

The limitations are gradually being eased by the Bank of Israel and the Treasury, anxious to prepare the ground for a series of planned privatisations of state-owned enterprises. At present, however, the market would probably be incapable of handling even the 20 per cent share of the Israel. Chemicals group which First Boston, the US investment bank advising the Government, has recommended for

The trading system is elec-tronic, with trades broadcast at specified hours on members' computer screens. Unmatched bargains are brought to the floor of the exchange where the official dealer invites offers through a paper-based system.
Foreigners may buy and sell listed shares, other than banks, without restriction. Withholding tax is generally 25 per cent, but majority foreign-owned

STOCK MARKET FACT CHART Market capitalisation: \$11.08bn (\$12 (\$1=shekel 1.64, £1=shekel 2.82)

Number of shares listed: 271 Top 10 stocks, percentage of market: 13.2% (80.1% including dollar-linked bank shares controlled by Treasury)
Trading hours: official - 10.30 am-3.30 pm Sun-Thurs; after - no time limit

Average daily turnover, 1968; \$5.9m (\$9.78m Including bank shares as above) Main indices: Tel Aviv General (all shares); Variable Index Current level of General Index: 95.77 (30/8); 1968 high:

100,65 (7/1); 1968 low: 90.29 (9/2) Settlement: one day after transaction

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companies enjoy a reduction. However, overseas interest in Tel Aviv is minimal. In part this is due to the market's volatility and small size, and in part to corporate fears of the Arab boycott of Israel. US Arab boycott of Israel. US money, mostly Jewish, was very active during 1981 and 1982, but pulled out after the 1983 crash, never to return. Since its last peak in April 1987, the Tel Aviv General Index has steadily declined, accompanied by a diminution of trading volume. Most major investors are on the sidelines.

investors are on the sidelines, anticipating a devaluation of the shekel as part of a package of overdoe economic measures

under the new government.
Nor are fundamental considerations of corporate health particularly bright. The diffi-culties internationally known companies such as Koor and Solel Boneh are facing would be enough to deter even the most committed Zionists from having a dabble on the market at the moment. **Andrew Whitley** 

This is the last in the series of market profiles. Tomorrow we publish a full list of the mar-kets covered and the date on which each profile appeared.

### Paris lifted by news on economy and taxes

LACK of direction characterised trading in Europe yesterday as anxiety over interest rate rises and the strong dollar kept advances to

a minimum and volumes low, writes Our Markets Staff.

PARIS moved higher throughout the session to end just off the day's highs but volume remained very thin. The market was buoyed by confirmation from Finance Minister Pietre Référence that the Pierre Bérégovoy that the economy would grow by at least 3 per cent this year and by news that the 1989 budget

rould contain tax cuts of hetween FFr10bn and FFr12bn. The OMF 50 index gained 1.97 to 347.26 despite worries over the pressure on the franc and the possibility of further interest rate rises. Some US buying was reported, but turnover was put at little more than Tuesday's FFr518m and the property orders were thus one or two orders were thus enough to produce significant moves. The CAC General index, based on opening prices, added 0.1 to 847.7.

One feature was Perrier, which rose FFr3 to FFr933 on 107,575 shares traded. Press reports that France would cut the rate of tax on reinvested company profits helped Per-rier, which should benefit from such a move, said one trader. The weakness of the franc was also helping exporters such as Perrier, while the company is still the subject of bid rumours,

Hachette, the country's biggest communications group, added FFr4 to FFr234 after announcing it would buy a majority stake in Salvat, a Spanish publisher.

FRANKFURT ended little changed after early gains evap-orated in a lack of interest towards the close. Volume crept up to DM1.86bn from Tuesday's DM1.6bn, but the DAX real time index ended 0.17 off at 1,165.36. The FAZ index at midsession, however, showed a rise of 2.36 to 484.81.

The market initially took some comfort from signs of an easing of pressure on interest rates when the Bundesbank set the fixed-rate tranche of the weekly securities repurchase pact at an unchanged 4.25 per cent. But a higher dollar, a weaker bond market and nervousness over the final terms

of the securities repurchase pact tender today all took their toll on sentiment. VW fell DM1.80 to DM246.50

after confirming a 2 per cent rise in first half group profits to DM310m. Bonds were undermined by a weaker D-Mark and profit-tak-ing. The yield on the latest 6% 10-year federal bond edged up

to 6.78 per cent from 6.77.

AMSTERDAM improved only slightly in thin trading despite a round of promising company results. Dealers were reported to be keeping their ads down until Friday when the latest US economic data the unemployment figures are released. By the close the CBS all-share index was 1.1

higher at 94.6.
The day was dominated by three stocks. Insurance giant Aegon rose FI 1.1 to FI 81 prior to revealing a 9 per cent rise in first half profits to F1 178m. Elsevier improved 70 cents to London · CONCERN about sterling and

interest rates overcame attempts at an early rally in London. The FT-SE 100 index closed 1.2 down at 1,753.6. Although international blue chips were boosted by a firm dollar, the market remained nervous, pending tomorrow's US unemployment figures.

Fl 57 on news that interim profits had risen 25 per cent to Fl 101.8m, while fellow-publisher Wolfers Kluwer dropped 40 cents to F1 139.80 after announcing profits of Fl 36m for the first half of the year.

STOCKHOLM rose for the second day in succession as domestic investors ignored pessimistic reports from overseas markets. By the close the Affarsvärlden General Stock Index had risen 4.4 to 857.7 as

shares worth SKr188m changed

hands. Volume is likely to remain light, say dealers, until the country's general elections on September 18 have passed. The feature of the day was

Volvo, which jumped SKr9 to SKr323 as dealers digested Tuesday's profit figures, which at SKr3.8bn were well above most analysts' expectations.

BRUSSELS moved ahead in quiet trading and the cash index added 11.5 points to 4,879.2. The day was dominated

by news that the Government had agreed, under pressure from the banks, to drop the price of its latest bond issue from 99% per cent of par to 99% per cent. The Government also agreed to cut the size of the issue to improve liquidity.

The agreement stimulated demand for several major stocks, notably electricals such as Intercom – up BFr5 to BFr3,180 – and Ebes – BFr35 better at BFr4,260. Tractebel again featured in speculative

buying, rising BFr50 to BFr8,140 on good turnover. MILAN picked up from an early setback on intitutional buying to end slightly lower in better volume than Tuesday's provisional L81bn. The Comit index fell 4.18 to 519.65.

Blue chips were worst hit in the nervous early selling, with Fiat ending L111 down at 19,200, and Generali L360 lower at L91,250. Both recovered after ZURICH saw little excite-

ment and shares moved lower despite a late run as investors went in search of bargains at the lower levels. The Crédit Suisse Index closed down 1.7

Aluminium producer Alusuisse eased SFr6 to SFr840 prior to announcing it will pay a dividend on its results this year, the first time since 1984. The announcement came after Alusuisse revealed a SFr350m rise in half-yearly group sales.

# Cathay Pacific Airways Limited 1988 Interim Results — Highlights

				Six mont		Year ended 31st December
	.:	: : .		1988 HK\$M	1987. HK\$M	1987 HKSM
Turnover	1.11			6,947.1	5,305.3	11,708.7
Operating profit Net finance charges		· ·	· • • • • • • • • • • • • • • • • • • •	1,658.2 418.2	1,226.2 172.3	2,943.5 433.5
Net operating profit Share of profits of <b>associa</b>	ied companies			1,240.0 45.4	1,053.9 33.6	2,510.0 70.9
Profit before taxation Taxation	t.,	४ - <del>- र</del> ४ - <del>- र</del>		1,285.4 286.4	1,087.5 251.8	2,580.9 450.3
Profit after taxation Minority interest				1,029.0 7.7	835.7 6.9	2,130.6 14.8
Profit attributable to shan Dividend	ebolders	- 7 <u>1.</u> 3 <sub></sub>		1,621.3 257.8	828.8 214.8	2,115.8 802.0
Retained profit		·		763.5	614.0	1,313.8
Earnings per share			. <del>:</del>	35.7¢	29.3€	
Dividend per share		, . €.		9,80	7.5€	28,0€

The directors of Carbay Pacific Airways Limited have today declared an interim dividend for 1988 of 9.00

per share.

The interim dividend will be paid on 30th September 1988 to shareholders registered at the close of business on 23rd September 1988; the share register will be closed from 16th September 1988 to 23rd September 1988, both dates inclusive.

The growth in both air passenger and cargo markets, particularly within the Asian region, continues with little sign of abatement. Operating costs remain relatively stable and despite some recent strengthening in the United States dollar, and therefore the linked Hong Kong dollar, the Company continues to benefit from the relative strength of foreign currencies in which most of its revenues are earned. There is no immediate sign of any significant and adverse change to any of the factors which materially affect the Company's rofitability and in these circumstances I again expect another good result for the year as a whole.

The full interim report will be sent to all shareholders on 5th September 1988.

D.A. Gledhill

### FT-ACTUARIES WORLD INDICES

Jointly compiled by the Financial Times, Goldman, Sachs & Co., and Wood Mackenzie & Co. Ltd., in conjunction with the Institute of Actuaries and the Faculty of Actuaries

NATIONAL AND REGIONAL MARKETS	WEDNESDAY AUGUST 31 1988					TUESDAY AUGUST 30 1988			DOLLAR INDEX		
Figures in parentheses show number of stocks per grouping	US Dollar Index	Day's Change %	Pound Sterling Index	Local Currency Index	Gross Div. Yield	US Dollar Index	Pound Sterling Index	Local Currency Index	1988 High	1988 Low	Year ago (approx)
Australia (87). Austria (16). Belgium (63). Canada (128). Denmark (39). Finland (26). France (129). West Germany (100). Hong (66). Ireland (18). Italy (102). Japan (456). Mailaysia (36). Mexico (13). Netherland (28). New Zealand (20). Norway (25). Singapore (26). South Africa (60).	143.23 86.36 110.99 117.67 120.54 116.94 89.66 74.29 99.81 126.92 70.16 155.11 134.28 151.66 100.58 73.67 118.83 110.64	99991149 999999999999999999999999999999	126.10 76.03 97.71 103.59 106.13 102.95 78.93 65.40 87.87 111.74 111.74 118.22 133.52 88.55 64.86 97.07 104.62	118.55 84.34 109.48 105.61 118.25 109.36 89.73 72.51 100.01 125.37 73.11 133.83 138.32 379.14 97.35 61.364 111.93 86.37	3.93 2.48 4.61 3.25 2.52 1.57 3.62 2.55 3.78 2.57 0.54 4.71 5.88 2.36 4.99	144.37 86.52 111.18 117.52 121.02 116.88 90.24 74.29 99.60 127.98 71.20 158.65 133.04 153.25 100.23 72.30 109.44 117.49	126.62 75.88 97.51 103.06 106.14 102.51 79.14 65.16 87.35 112.24 139.13 116.68 134.40 87.90 63.41 95.98 103.04 98.21	119.26 84.01 109.26 105.39 118.39 108.83 89.53 72.09 99.78 125.80 134.78 137.27 383.10 96.43 64.28 102.49 110.34 86.66	152-31 98.18 199.89 128.91 132.72 139.53 99.62 80.79 111.86 144.25 81.74 177.27 154.17 180.07 110.66 84.05 132.23 135.89 139.07	91.16 83.72 107.06 111.42 106.78 72.77 67.78 84.90 104.60 91.33.61 107.83 90.07 95.23 64.42 98.55 97.99 109.87	166.15 97.88 133.22 137.50 122.55 114.53 104.72 146.87 144.14 89.30 151.91 173.08 371.20 128.12 126.28 175.24 167.57 184.37
Spain (43) Sweden (35) Switzerland (55) United Kingdom (324) USA (580)  Europe (1013) Pacific Basin (671)	112.17 74.63 123.09 106.96	-0.8 +0.2 -0.9 -0.4 -0.3	123.33 98.75 65.70 108.36 94.17 88.22 134.19	131.86 107.61 73.33 108.36 106.96	3.43 2.65 2.33 4.68 3.72 3.88 0.76	141.24 111.94 75.30 123.56 107.30	123.87 98.18 66.04 108.37 94.10 88.25 136.55	132.57 107.01 73.57 108.37 107.30 93.70 132.73	164.47 125.50 86.75 141.18 112.47 110.82 172.26	130.73 96.92 74.63 123.09 99.19 97.01 130.81	161.20 128.05 108.95 151.94 131.41
Euro-Pacific (1684) North America (708) Europe Ex. UK (689) Pacific Ex. Japan (215) World Ex. US (1885) World Ex. UK (2141) World Ex. So. Af. (2405) World Ex. Japan (2009)	131.55 107.53 85.92 120.06 130.88 121.43	1.6 -0.3 -0.4 -0.2 -1.5 -1.2 -1.1 -0.3	115.81 94.66 75.64 105.70 115.22 106.91 107.08 92.89	116.67 106.90 84.79 106.91 116.11 113.39 113.09 102.28	1.72 3.69 3.20 4.11 1.79 2.21 2.41 3.78	133.68 107.83 86.30 120.31 132.92 122.92 123.02 105.86	117.24 94.57 75.69 105.52 116.57 107.80 107.89 92.84	132.73 117.19 107.20 84.66 107.08 116.60 113.87 113.52 102.44	147.53 113.29 92.99 128.27 146.49 131.77 132.39 112.43	120.36 99.78 80.27 87.51 120.26 111.77 113.26 100.00	142.30 131.74 111.96 155.71 142.73 136.97 138.00 131.79

**SECTION III** 

# **FINANCIAL TIMES**



The world's aerospace industries are now busier than ever. Rising costs have led to fewer

new civil and military programmes, but production runs are longer and the pattern of international

collaboration increasingly complex. Michael Donne reports.

# Further rise in spending

International Air Show conscious that between now and the end of the century they will enjoy well over \$1,800bn tankers and airborne early (about £1,000bn) of new business, as aviation in all its \$55bn on helicopters (mostly william).

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In to Stage

forms continues to expand.

Despite defence budget cuts in some countries, military business continues to grow, while there is no end in sight to the growth in commercial. aviation, and work on space ventures, despite some set-backs to the US programme spent on spacecraft, notably and uncertainties over specific projects, such as the UK's Hotol, is poised to expand dramatically.

In commercial aviation, it is estimated that spending overall will amount to more than \$700bn. Outlays on new jet transports up to the end of the century or early into the next will amount to some \$414hn, with at least another \$50bn on regional airliners of various

types. Some \$150bm is expected to be spent on new airports and another \$50bn on their equipment, and outlays of some \$50bn to equip the air traffic control system to cope with the

THE WORLD'S aerospace estimated that outlays will be companies will congregate at around \$755bn, comprising next week's Farnborough some \$550bn on new military some \$550bn on new military combat aircraft, with another military).

It is also estimated that at least \$200km will be spent on guided missiles, primarily for tactical combat use, a figure that may well be conservative. In addition to all this, possisatellites for practical applications, such as communications. But despite current tenden-

cies to curb budgets, and the problems encountered in the US stace programme, spending on developing this new frontier will inevitably increase, covering as if does all facets of mankind's endeavour - technological, economic, political and sociological. There are many who believe

that in the years to come space-spending will eventually rival, if not overtake, outlays on commercial and military avia-

control system to cope with the rising tide of traffic.

In the military field, it is third of the total (Rolls Reyce



estimates that demand for commercial jet engines alone may amount to as much as \$200bn by the end of the cen-tury), together with a vast array of avionics (airborne electronics) and other systems and equipment of all kinds, probably also accounting together for close to one third

of the overall total. Vast though the business may be, however, winning it is already becoming tougher. In the defence arena, some governments, especially the US, are trimming defence budgets, with in some instances significant changes in procurement policies. The aim is to encourage greater competition for the available business and, it is hoped, achieve better value for

money.

This, in turn, is obliging many military manufacturers, again especially in the US, to spend considerably more of their own cash on competitive ventures with which to bid for defence business with no energy. defence business, with no guarantees of any returns. A further spin-off from that

situation is greater concentra-tion on export sales. The UK's own military protion.
Included in all those figures

of the new Memorandum of Understanding with Saudi Arabia earlier this summer for the long-term provision of a variety of military aircraft and support facilities. The orders could amount in the long term to as much as \$15bn of new

business for Britain.
In the commercial field, the vast array of airliner types across the whole range/payload spectrum has generated a fiercely competitive buyers' market among the airlines, which is affecting not only the sirframe and engine manufacturers but also financiers.

The latter are themselves

becoming increasingly competitive in bidding for the business that is available. The individual performances of airliner types available are often so close that decisions on orders worth billions of dollars can be influenced by the financing terms alone. To meet this tougher busi-

ness climate, aerospace manufacturers are working harder than ever to cut costs (especially by streamlining workforces at all levels, including management), reduce develop-ment times and improve qualduction outlook has been sig-nificantly improved as a result and more cost effective manu-

facturing techniques Conversely, they are also obliged to increase their research and development budgets to stay ahead in an era of

ever-accelerating technological

advance. Apart from this problem of costs, probably the biggest single factor behind the intensifigie factor behind the intensifi-cation of aerospace competi-tion is that most of the civil and military aircraft and engine types likely to be needed through the remaining years of this century are either already committed to produc-tion under development or

tion, under development, or close to being committed. This in turn means that many of the contracts for engines, avionics, components and systems of all kinds have

been, or soon will be, awarded. Suppliers that have not yet won business on any of those ventures must face the fact that only a limited number of new programmes will now emerge – although each indi-vidually may well be a multi-billion dollar venture – and the competition to win some share of the available business will become even tougher. Companies failing to win con-tracts on those few ventures

One result is that many companies in the aerospace indus-try are establishing joint teams to bid for the contracts on

This is especially so, for example, for major military equipment contracts on the new European Fighter Aircraft, and in the commercial arena on the new generation of Airbuses (the A-330 twin-en-gined high-density jet and A-340 four-engined long-range jet), and the McDonnell Doug-las MD-11 long-range tri-jet. Because of rising develop-

ment costs, another major trend is the emphasis on derivatives, whereby manufacturers use all their ingenuity to devise improvements in their products to meet increasingly sophisticated airline and military demands, without incurring the expense of entirely

new types. Such derivatives are welcomed because they evolve more directly in response to market needs, and thus meet them more closely, as well as being cheaper to build and to

buy. This situation is seen clearly in commercial aviation, where virtually every major aircraft on offer, from the Boeing 747 must are canen intra high by-pass" engines; and possible new types of aircraft emerging from a possible Air-

long-range Jumbo down to the the British Aerospace 146, is available in a variety of mod-

These, together with the few new airliners now under development, such as the Airbus A-330 and A-340, will continue to satisfy most of the airlines' demands over the next decade

Entirely new airliner ventures are likely to emerge only when radical technological innovations occur, offering sufficiently significant improvements in economic performance to justify both the expense of their development and their high initial purchase

Examples of such possible new ventures include a sec-ond-generation supersonic airliner especially for trans-Pacific use; and development of a range of prop-fan powered airliners, starting with the McDonnell Douglas MD-91 100-seater and extending upwards through the entire range/payload spectrum as engine manufacturers expand their involvement in what are called "ultra

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bus/McDonnell Douglas link. in the smaller regional air-liner field, already a crowded arena, there are possible new developments in jet-powered 40-60-seater aircraft, and in smaller prop-fan types of less

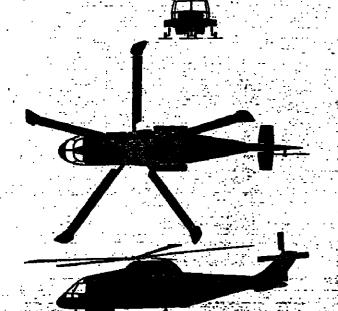
than 100 seats. In the military field, derivatives are also playing a major role, mainly in the form of improvements in engines and in avionics (airborne electronics) systems, which can significantly improve aircraft performances without the expense of developing entirely new air-

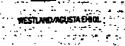
Nevertheless, some major new military ventures are planned, such as the European Fighter (EFA), the Advanced Tactical Fighter (ATF) for the US Air Force, and the Advanced Tactical Aircraft (ATA) for the US Navy.

One common factor in most if not all of these programmes, actual and potential, is the growth of international collaboration. This has already become

well established in the world

Continued on page 12



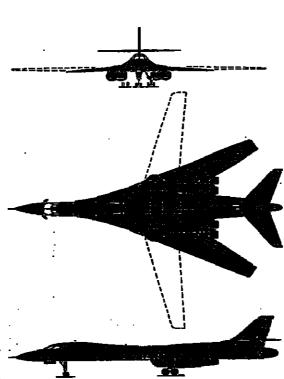












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# Rapid growth in traffic but declining revenue

industry is currently enjoying an unprecedented period of rapid traffic growth, although the benefits are being reduced significantly by declining reve-

nue vields. According to the Interna-tional Civil Aviation Organisation (the aviation technical agency of the UN), last year the world's airlines collectively carried just over 1bn passen-gers on scheduled services, or 9 per cent more than in 1986.

In some regions, and even individual countries, the growth rate was much higher, and all the forecasts are that this growth is likely to con-

In the first half of this year, the growth rate for scheduled international services by the 171 member-airlines of the International Air Transport Association was 13 per cent, but this is expected to drop back to between 5.5 and 6 per cent a year in 1989.

Even at that level, however if sustained through the 1990s which, short of a major economic downturn, most observers expect to be the case - it means that the total number of passengers handled annually will have doubled by the end of

this century. This sustained traffic growth is already generating problems which in turn will become more severe as expansion con-

One of the most serious of these is the decline in revenue yields, stemming from rising costs against a background of increasing pressures for cheaper fares, in turn stimulated by the intensification of

The latter is itself due largely to the increasing relaxation of Government regula-tions in such matters as route licensing, market access, capacity controls and fares pol-

IATA is forecasting a provisional operating profit for its member airlines for this year of some \$2.3bn, compared with

about \$2.4bn for 1987. At the same time, the rapid escalation of new technological developments, such as the growth of computer reservations systems and the emer-gence of CRS "clubs" or groups, is profoundly changing the structure of the airline industry – a development that still has a long way to go.

spend substantial sums remeet the traffic growth and to replace the growing number of jets which are reaching the end of their useful life.

Looming over all these prob-lems, however, is what the IATA director-general, Dr Gun-ter Eser, has described as the higgest single problem facing the industry today - the increasingly urgent need to improve the overall infrastructure on the ground and in the

On the ground there is a growing need for more passen-ger terminals and runways, and in some parts of the world even more airports (along with a need for extensive expansion and refurbishment of existing ones), to cope with the growth. Worldwide, between now and the end of this century, up to \$150bn will be spent on air-

Much of this will be spent on modernisation and expansion of existing airports, but on present plans close to 100 new airports will either be built, under development or in the planning stage, by the year

In the air, the increasing volume of flights is already imposing severe strains on air traffic control capacities, especially in the US and Western Europe, as aircraft movements increase. IATA has forecast that in Europe alone, the number of international scheduled aircraft movements (about 8.54m in 1987) is expected to double to about 6.6m a year by the end

of the century.
The IATA says there is already a serious shortage of air traffic control capacity, and that far-reaching improvements to the system are

In the UK alone, some £600m is to be spent by the mid to late 1990s on the improvements to the ATC system - a sum that may well need to be increased if current problems in that area are to be adequately solved.

All these problems are gener ating for the world air transport industry an unprecedented era of rapid change. Already, the shape and man-agement conduct of the industry is totally different from that of five years ago, and it will have changed even further by the end of this decade.

Apart from the need to improve the industry's funda-mental infrastructure, however, probably the most signifidevelopment, and cant certainly the most far-reaching in its long-term impact, is the rapid move away from Govern-

ent controls towards deregulation and liberalisation. Within the European Com-munity, a start has been made with decisions by the Transport Ministers late last year to break the log-jam of government controls which have kept Europe's airlines from the full force of open mar-

ket competition.
These have included liberalising fares policies, improving market access for airlines, both existing and new ones, and widening the opportunities for airlines to win bigger shares of traffic on any route by changing the current rules on capac-ity-sharing under bilateral air

These moves were followed earlier this year by a further EC directive introducing com-petition in a wide range of air traffic handling and operating techniques at airports.
Welcome though these mea-

sures have been to the consumers of air transport - the pas-sengers - they are still widely regarded as not going far enough to ensure total air transport freedom in Europe.

Although the EC itself wants to see complete freedom in the air by the end of 1992, many in the airline industry believe that target to be unrealistic. Even the limited reforms so far achieved have taken years of patient negotiation.

And there is still much

reluctance among governments to surrender the national sovereignty over air transport that has been the cornerstone of the industry's development since the early 1920s.

Policing the measures already announced, to ensure their implementation by the airlines, will be a formi enough task for the EC, but it will also be under considerable pressure, especially from consumer groups, for further liberalisation measures before the 1992 date.

Another move that is likely to further increase competition and change the structure of the industry is the growth of efforts by governments to pri-vatise their flag strlines either wholly or partially, doubtless

FARNBOROUGH

influenced by the highly- suc-cessful flotation of British Air-

ways in 1987.
There are plans for complete or partial privatisation as far afield as Austria, Canada, the Philippines, Portugal and West Germany, and others will fol-low. Part of the reason for this is the desire of governments to withdraw from what is become ing a very high cost industry to support, especially with reequipment costs rising

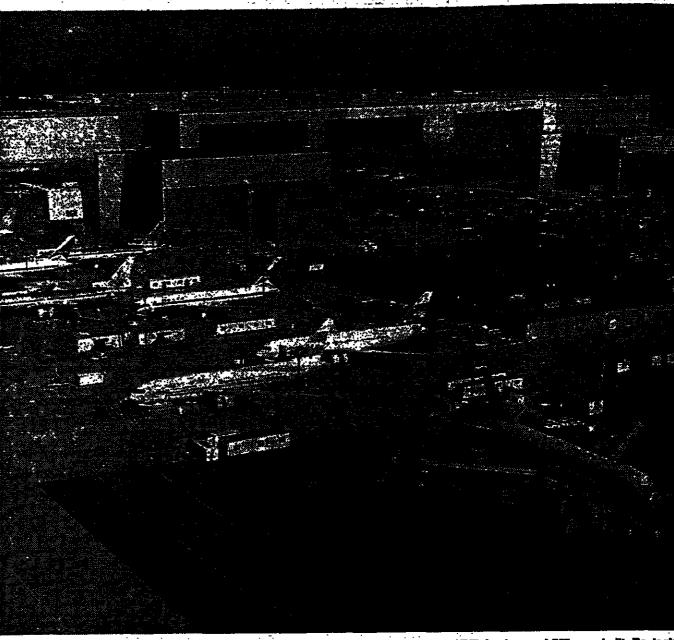
But more significantly, it is seen as recognition that in the rapidly expanding air transport markets of the future airlines will stand a better chance of financial success if they are free to move swiftly to readjust to changing conditions without the shackles of governmental

In addition to privatisation, there is also a trend towards airline collaboration, either through complete take overs or mergers (as with British Airways' take over of Brit-ish Caledonian), or the purchase of minority shareholdings (as with BA's purchase of a stake in the smaller regional airline, Brymon), or even through operat ing pacts to improve the global strength of the participating carriers (such as the BA marketing deal with United of the

Further, the bringing together by individual airlines of their computer reservations systems into groups or clubs, such as Amadeus and Galileo in Western Europe, is bound to have a major influence upon the industry's future develop-

The over-riding objective in all such moves is to strengthen enable them to meet the increasingly formidable compe tition and to increase their individual market shares

These closer relationships are many and varied, but they are already reshaping the industry - here again the most striking example has been the way in which the BA-BCal merger has resulted not only in an enlargement of BA's own route network but also in new opportunities for other UK airlines to pick up UK domes tic and international scheduled service route licences formerly either operated by, or held by,



Completed aircraft stand outside the Boeing factory at Everett, north of Seattle, where 747 Jumbos and 757e are built. Boeing's order backlog of over 1,000 sircraft of all types represents more than four years' work at current production rates

#### **CONTROLLING THE AIRSPACE**

#### Air movements to double

travellers in Western Europe and the US have become accus-tomed to delays on the ground - some severe, especially in the UK - while the air traffic controllers have struggled to cope with the rapid growth of demand for "slots" in the already densely-populated airspace over their countries.

At the same time, in some countries, especially the UK, passengers have been given frequent media reports of near misses", some of which undeniably have been serious.

The two problems have given rise to genuine fears about civil aviation safety at a time of big increases in traffic, averaging more than ten per cent in the past two years and expected to continue growing at about 6 per cent over the years immediately ahead.

The fact that, so far, there has not been a mid-air collision in the skies over Western Europe indicates that, despite the growth, the air traffic con-trol systems (ATC) are per-forming well albeit in the face of considerable difficulties

These include in some places outdated and often inadequate equipment, and a widespread lack of co-ordination between individual national system

Moreover, the overall situa-tion, difficult though it may be, has been severely aggravated this past summer by labour disputes in the ATC sectors of various countries - the UK, Spain, Italy and Greece, for example - which at various times have themselves gener-ated unprecedented congestion (with flights delayed by well over 24 hours in some cases) with the inevitable "domino effect" throughout the air transport system.

Whatever the reasons for these industrial disputes, they undeniably have brought misery to many thousands of inno-cent air travellers, and inflated airlines' bills by many millions of pounds. The long-term damage to air transport is mealeu-lable.

But many of these current problems, including the labour relations problems, have not emerged dramatically over-night. They have been develop-ing for some considerable time, against a background of repeated warnings from many aviation observers.

What has eraggerated them, as the International Air Trans-port Association (IATA), repre-senting 171 airlines worldwide, has pointed out, is that traffic growth over the past two years has been much greater than anyone anticipated, accelerating the need for improvements in the air traffic control system originally planned for the

Nevertheless, no one in air transport minimises the prob-lems. IATA says the shortage of ATC capacity is the most difficult single problem con-

OVER THE past summer, air fronting the industry, and fully tries' ATC systems and recomexpects it to get worse.
It points out that the overall volume of 3.3m aircraft movements on international flights

in Western Europe (the Eurocontrol area plus Switzerland and Austria) reported in 1987, which was 7.8 per cent up on 1996, will rise by a further 7 per cent to more than 3.54m movements in 1988, and by a further 4.5 per cent on average each year to reach over 4.61m by 1994.

From those figures, IATA forecasts that the 1987 level of movements will double by the

year 2002 In the UK, many airlines, especially charter operators, who have suffered severe dialocation of their meticulously-

eneration of ATC sys member-governments. The aim progress report by November. Such actions and outlays

is arguable. Many controllers, in the UK and elsewhere, argue that cur-

They argue that at a time Traffic control systems are performing well in

control - is treated financially

like a poor relation.

IATA argues that in Europe

individual governments must

do much more, not only to overcome the industrial rela-

tions problems that plague the

region, but also to overcome staff shortages where they

exist "by fairly rewarding flexi-

much more to be done. It says

the current policy of introducing "flow management", whereby limitations are placed

on the numbers of flights mov-

ing through specific airspace sectors, is only a palliative and

not a cure.
It was never intended for

constant use, and is being expected to do more than it

was designed and staffed for "and cannot therefore cope effi-

ciently."

The only answer, in the air-

ble working arrangements But IATA insists there is

planned operations this past When some \$414bn will be summer, point out that the spent up to the turn of century hills for such dislocation are rising steeply, and that if the on new aircraft, with another \$150bn on airports and associsituation is not corrected, air ated developments, spending on the vital "third leg" of the civil aviation stool – air traffic fares may have to rise to offset

Other sirines, including Luf-thansa of West Germany, have found that ATC delays are costing them substantial sums.
Much is already being done
to improve the situation, but it is essentially a slow process. In the UK, some £800m is being spent between now and the mid-1990s on improving exist-ing ATC equipment and introd-ucing new facilities, including a totally new and expanded London Air Traffic Control

Centre.
The UK National Air Traffic Services, under the Civil Avia-tion Authority, point out that it is not just a matter of introducing new equipment: training more controllers takes time, and even while improvements are being made in the system, the existing operation has to be run 24 hours a day, seven

days a week.
Similar sums are being spent in other countries, although the spending pattern is uneven—hence the labour disputes, often stemming from claims of madequate equipment, the low pay and status of controllers, and impossible working condi-

While it is not possible to quantify in detail the total amount that is being spent over the next decade throughout Europe alone on improving ATC systems, it is clearly likely to be several billion dol-

ars. The UK has also taken the initiative in Eurocontrol, the body set up some years ago to manage the upper airspace over much of Western Europe. It has urged that Eurocontrol should study ways of relieving by identifying the incompatimend ways of removing them.
At the same time, it has urged that Eurocontrol should airlines argue that the problem must be faced and overcome. no matter how difficult it may draft specifications for the next at individual airports.

This night curiew effectively and seek additional funds from shuts down most of the air is to produce some kind of hours or more every working day, leaving a huge amount of expensive industrial resources idle. The airlines believe that

will do little or nothing to alleviate the immediate problems of congestion, and whether they will be adequate to solve the problems in the long-term

rent spending plans are nowhere near sufficient to meet the situation.

opments covering wider areas of Europe than at present, so that different ATC centres and the equipment they use can be made more compatible than at spite of often inadequate equipment

> This particular solution has already been espoused by the aviation Ministers who sit on the presidential commission of Eurocontrol, the body set up some years ago to control the upper airspace over Europe but which may now become a much wider and more powerful organisation governing all European air traffic control

nosed restrictions on night

flights at many airports, the

transport industry for seven

with the increasing number of

quieter jets, the severity of

such curiews could be allevi-ated, although it does not advo-

 A more internationally-based approach to ATC system plan-

ning is also needed, with devel-

cate their elimination

At the same time, the current flow-management system must be much better co-ordinated internationally. At present, say the airlines, it is unresponsive and often causes loss of capacity.

The IATA itself has been studying all these matters in detail through a special Task Force set up in July. This small group, which is due to report by the end of the year, will look into the capacities of airport terminals, aprons, run-ways and taxi-ways, as well as the immediate air space around airports to see where there are constraints and how

they can be removed.

In general, the air transport industry believes that there is no instant and spectacular solution to the current ATC capacity problems.

thes only answer, in the arlines' view, is to develop more
capacity — by making more
efficient use of existing available airspace, spreading the
loads out more evenly during
each day, so as to ease pressures in peak periods. But it argues that much can be achieved by a wider and deeper international recognition of the problems, and a greater willingness by countries to work together. sures in peak periods.

If this means revising the current environmentally-im-

Michael Donne

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THE WORLD'S major airliner manufacturers are currently enjoying a boom in sales of jet used low price of aviation fuel transports of all kinds that has made it more profitable for seems likely to continue into many airlines to retain exist-

HIR I IN

growth of world air traffic, cur-

some big orders so far this But many of those aircraft year, and if this surge of are now more than 20 years old year-end, 1988 may well set a maintain notwithstanding the new record for airliner buying, low price of fnel, while their exceeding last year's total of noise and pollution emission 788 new jets of all kinds levels are becoming unaccept ordered, worth over \$29bn\_\_\_\_

The demand is spread across the entire airliner range/pay-load spectrum, from the short-haul arena where passengers are continuing to insist upon increasing frequencies of ser-vice with smaller afteraft, increasing numbers of larger medium-to-long range twin en-gined jets for routes where traffic densities do not justify the use of bigger 747 Jumbotype aircraft.

The latter in turn are also in growing demand, as more and for these ventures, more passengers seek to fly non-stop over longer distances.

The second factor is that many of the bigger airlines of jets, estimates that between how the bigger airlines of jets, estimates that between the long. have now begun the long-awaited replacement of their existing ageing fleets.

THE WORLD'S commercial

aero-engine manufacturers are

likely to remain exceptionally

active over the remaining years of this century, not only

in fulfilling the big engine orders already on hand for the

\$72bn-plus of new airliner con-tracts outstanding, but also in-meeting the massive volume of

others are General Electric and

Pratt & Whitney, both of the US), estimates that out of the

total \$414bn value of antici-pated new airliner orders over the next ten years, the engine

makers' share may amount to

as much as \$200bn (about)

spare parts over the 20 years or

so of service life of the engines

well over half of this business

Rolls-Royce believes that

new business anticipated.

ransports of all kinds that seems likely to continue into many atribus to retain exist the early 1990s.

Two factors are causing this demand. First is the continued that the result of jets, Lockheed TriStars and seven per cent a year and medium-to-long range jets, as expected to be sustained into well as short-range McDonnell the immediate future.

Douglas DC-95 and BAC One—This has already resulted in Elevans.

Some big orders so far this But many of those aircraft.

demand is sustained to the and are becoming expensive to noise and pollution emission levels are becoming unacceptable in many countries.

> made to gain extended service lives for some of these older types through ambitious re-en-gining programmes with modern quieter and cleaner jet engines – as such as Rolls-Royce Tay engines in One-Elevens – so far the airlines' response has been slow. Big efforts are being made by the companies involved (Dee Valsan on Boeing 727s, both in the US) to win airline support-

now and the year 2005, outlays by the airlines on new aircraft will amount to some \$342hn (in

This has been delayed for some time because the contin-

and the other \$100bn to meet replacements.

While some efforts are being

thrust and over will be

required — such as Boeing 747
and McDonnell Denglas MD-11
long-range jets, and the 767
medium-to-long range and Airbus A-330 short-to-medium
range high-density twin-jets. About one-quarter of the market will be found in aircraft of 120 to 200 seats, such as the Airbus A-320 and the

Rolls Royce of the UK, one of the world's "big three" com-mercial engine builders (the Boeing 757, where engines of between 20,000 and 40,000lbs thrust will be required.

The remainder of the business will come in the smaller jef categories of 50-100 seats, such as Fokker 100s and the smaller versions of both the McDonnell Douglas MD-80 and Boeing 787 series and British Aerospace 146, where engines of between 10,000 and 20,000lbs

or between 10,000 and 20,000 and thrust are required.
Other major engine builders sharing this business, apart from GE, Pratt & Whitney and Rolls-Royce, will be CFM International (the consortium formed by General Electric of the IS and Specma of France. This represents both the value of the initial contracts anticipated, and the value of the US and Snecma of France is likely to come from the larger airliners of more than 200 seats each, where the "high thrust" engines of 50,000 lbs

1988 dollars), of which some \$242bn will be to meet growth

If current orders of \$72bn are included, overall spending by airlines in the Western world up to the year 2005 will amount to \$414bn, compared with the \$372bn spent on jets between 1950 and 1987.

The result will be that, by 2005, the overall world jet transport aircraft fleet will have grown from the end-1987 level of 7,425 to 11,715 aircraft, after allowing for both replace ments and traffic growth.

There is already an excep-

tionally wide range of jet airliners available, covering the entire range payload spectrum, from 100-seater jets upwards to over 450-seaters, and from short range jets such as Boeing 737s and McDonnell Douglas MD-80s to very long-range air-craft such as the current Boeing 747-400, the Airbus A-340 and McDonnell Douglas MD-11.

Most of these aircraft are each available in a variety of models. As a result, most of the airlines requirements can now be met either by fine-tun-ing the performances of one or another of the different models

A boom in jet sales

Commercial jet airliners

**Committed products** 



\_\_\_ MD-92X

available, or by developing new derivatives to meet new-ly-emerging airline needs. This "derivatives philoso-phy" is dictated by the vast

costs involved in developing entirely new airliners. Boeing, for example, which until ear-lier this year hoped to develop

a new 150-plus seater airliner using the revolutionary propfan type of engines, was obliged to drop the plan because of lack of interest among airlines.
It now seems likely that

entirely new types of jets will only emerge when major tech-

Source : Boeing Commercial Airplanes nological breakthroughs offer sufficiently large performance improvements to justify their

heavy development costs.
This could still result in the 1990s in a new generation of ultra fuel-efficient prop-fan airliners, based on the McDonnell Douglas MD-91 and MD-92 famElectric GE-36 prop-fan engine or the Pratt & Whitney Allison 578DX, but no formal launch commitments on those aircraft have vet been taken.

ily built round the General

Various other major new engine developments are still being studied, such as "ducted fan" or "high by-pass ratio" engines for the larger aircraft. But while aviation fuel prices remain steady the likeli-

hood of their full-scale development is limited. In the meantime, one major

outstanding question is whether there will be any full-scale collaboration between Airbus and either McDonnell Douglas or Lockheed of the US, in a bid to reduce the domination of Boeing in world markets.

Discussions have been in progress all summer, and Airbus has asked both McDonnell Douglas and Lockheed for firm proposals for such collabora-tion by October.

The immediate objective is the development of a stretched version of the existing 150-plus seater A-320 to carry 180-200 seats, which is seen as a logical step forward by Airbus.

But other ideas being can-vassed include development of a large derivative of the McDonnell Douglas MD-11 trijet, using the newly-designed wing of the Airbus A-330/A-430 to produce a long-range high-

density rival to the Boeing 747 Jumbo jet.

Boeing remains calm in the face of such potential opposi-tion. It believes its existing jets, from the 737 short-to-medium-range aircraft, the medium-range 757 twin-engined aircraft, the medium-to-long range 767 twin-engined jet, up to the long-range four-engined 747 – all available in a variety of models - already effectively covers all possible airline

Boeing is now certain to have a new record year for orders in 1988. By early August, the inflow of new orders amounted to 461 aircraft, worth more than \$20bn. matching its previous best year

With the further aircraft in negotiation, Boeing believes the final figure for this year could be more than 600.

The company's present back-log of 1,042 aircraft represents over four years' work at cur-rent production rates, and Boeing is planning to increase production rates on all its models.

world's best-selling jet with well more than 2,100 ordered so far, is currently built at the rate of 14 a month, but this will rise to 17 a month next

Michael Donne

THE ENGINE BUILDERS

> 787 Stretch/ Main deck treight

## Power ratings going up

tional Aero Engines, the sev-en-company, five-nation con-sortium (including Rolls-Royce, Pratt & Whitney, Motoren- und Turbinen-Union of West Germany, Flat Aviazione of Italy and three Japanese engine companies) to build the V-2500 engine for the European A-320

Also involved are Avco Lycoming Textron, which makes smaller commercial jet engines, such as the ALF-502R for the British Aerospace 146 four-engined regional jet airliner, and Allison Gas Turbine Division of General Motors.

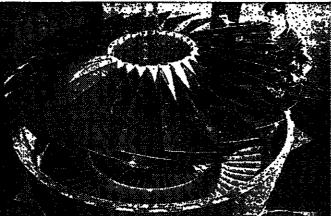
At the top end of the market, for the "high thrust" engines for the biggest and heaviest jet airliners, the three major comto build the highly-successful panies are all now extending result in the use of bigger air-the capabilities of their engines for the Boeing 737 and Airbus — the Rolls-Royce RB-211-524 range air routes, rather than to series, the General Electric follow the basic market

CF6-80C2 and the Pratt & Whitney 4000.

Their common objective is to push the power of those engines well above the 60,000 lbs thrust level, to meet airline demands for more power for

their higger airliners.
Aircraft for which such engines are needed include the high-density Airbus A-330, the MD-11 and the stretched Boeing 767, with possibly the latest Series 400 Boeing 747 Jumbo also involved. There are several reasons for

this. One is that increasing congestion in the air, especially around major airports, with its consequent problems for air traffic control and restrictions on take-off and landing "slots", is tending to



Full-scale model of the huge Rolls-Royce RB211-524L turbofan engine, to power Boeing 767-300 airliners next year

demand for increased numbers they require more power to get of flights with smaller aircraft. them off the ground, hence the need for higher engine thrust. As this stage no one can say As such aircraft in consequence get bigger and heavier,

where this trend will end, but as a matter of prudence all of the "big three" engine builders plan to keep pushing their thrust ratings upwards.

At the same time airlines are calling for twin-engined aircraft with greater long-range capability, especially for over-ocean flights, as a means of reducing long-range operating costs on routes where traffic densities do not justify four-engined or even three-engined equipment.

As a result, Rolls-Royce for example is designing capability for well over 72,000 lbs thrust into the latest version of the RB-211-524, the model L, to take account not only of current requirements but also the possible emergence of even higher thrust demands into the

These developments in jet engine design, requiring higher thrust to be sustained for longer periods of time, are in turn driving engine manufacturing technology further into the areas of advanced materials, especially to withstand the higher temperatures that higher thrust levels involve.

As a result, a wide rance of new materials is under investigation, using glass, metals and ceramics as a base, with a variety of reinforcing fibres. Titanium with fibre reinforcement is likely to be used for engine compressors, for example, and ceramics reinforced by ceramic fibres for turbines.

This technology will eventually spin off into other indus-tries. Rolls-Royce believes that as a result of the work being done on new materials such as ceramic composites in the aero-engine industry, a new era in materials for many industries will emerge that might be worth as much as £300m annually by the year 2000, rising to £2bn a year by

Another revolutionary development in the aero-engine industry, though still some way off quantity production and service life, is prop-fan pro-

These engines are developed from the original turbo-prop concept in which propellers are harnessed to gas-turbine engines. In the prop-fans, how-Continued on page 4

# The second second of the second secon We put today's most successful commuter aircraft in the air...

No one covers short haul better than Shorts.

But then we've always been a forward-looking company.

Our experience in regional aircraft is the envy of our competitors. So is our product. The current wide-body 360 for instance, perfectly balances profitability with passenger comfort.

Chosen by over 40 operators worldwide, it carries over 1/2 million passengers every month. It's profitable with load factors as low as 35%. And its despatch rate is 99% reliable.

But while providing the ideal commuter aircraft to meet today's tough requirements, Shorts have been considering how to meet the even tougher needs of tomorrow

The vital regional segment of the market will be even busier and more competitive.

So, based on the development of smaller turbo fans with improved specifics. Shorts have designed the affordable jet airliner of tomorrow. The technically superb FJX.

The FJX will not only be a quantum leap in standards of service and comfort for passengers, it will also mean new opportunities for the development of hub by-pass and longer range city-to-city services.

its development is based on modern aerodynamic and structural design, cost-effective systems and improved manufacturing techniques. Plus the inherent high performance and productivity of the jet airliner.

The result is an aircraft capable of operating far more profitably than even today's equivalent turbo-props.

Even with healthy competition, we estimate the FJX can capture 50% potential sales in the mid-size, fan jet market. Semething to look forward to.

tomorrow's is waiting for take-off.

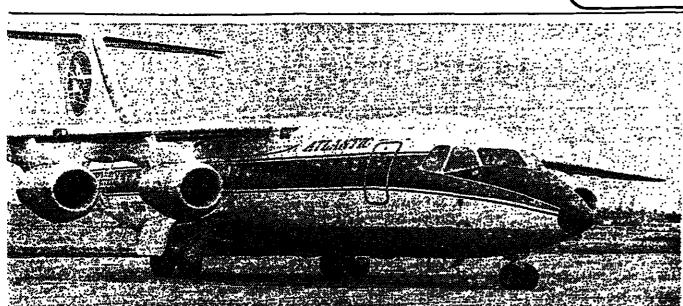


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#### **REGIONAL AIRLINERS**

## World market expanding

types of short-range airliners - the so-called "regional airpowered - is expanding rapidly throughout the world.

This is due partly to the increasing desire of smaller communities to have their own but also to the growing demand for direct links between these smaller commu-nities, by-passing the bigger "hubs" where air traffic congestion is aiready a serious

Development of this type of regional airline operation has been especially rapid in Western Europe, particularly in the EC countries where aviation liberalisation has already resulted in increased freedom

for operators.
This trend seems likely to continue, as the 1992 deadline for EC harmonisation draws closer with the promise of even greater intra-Community

regional air travel.

Market studies by British Aerospace, which builds three types of regional airliner (the 19-seat Jetstream 31 turboprop, the bigger 64-plus seat Advanced Turbo-prop and the four-engined 100-plus seat Type 146 jet), indicate that the over-all market for the broad category of "regional" types, seat-ing anywhere between 12 to 130 passengers, is in excess of

\$52bm (in 1988 dollars) up to the end of this century. BAe suggests that the value of the turbo-prop aircraft market alone is in excess of \$23bn. with the short-range regional et airliner market worth more than \$29bn.

Short Brothers, of Belfast, which builds the twin-turboprop Type 360 and 330 airliners, believes the regional market will grow worldwide by more than 5 per cent a year in the broad category of 20-130 seat airliners until the end of

the century.

It also believes that in the 40-60 seat classes alone there could be a market for more than 1,000 aircraft, worth sev-

eral billion dollars. Canadair, the Canadian builder of the Challenger corporate jet, assesses the poten-tial market for regional aircraft at more than 2,420 through to the end of the century, of which 1,380 aircraft will be in the 20-40 seater class, and 1,040 in the 41-plus seat class.

Thus although their figures may vary, the major manufacturers are agreed that a large world market for regional aircraft will exist over the next

Already, the regional sector is served by a wide range of aircraft. They include the 19seat Jetstream 31 of BAe; the 20-plus seaters such as the Bra-zilian Embraer Bandeirante and 30-seat Brashia; the Earger Short Brothers' 36-seat Type 360; the 34-seat Saab 340; the 40-plus passenger de Havilland Canada Dash 8 and Franco-Ital-ian Avions de Transport Regional ATR-42; the 50-plus seat Dutch Fokker 50; and the 64-plus seat BAe Advanced Turbo-prop (ATP).

Under development are other types such as the Brazilian/Argentine Embraer-FAMA CBA-123 19-plus seater, and the 72-seat ATR-72; with a larger version of the Dash 8, the Series 400, planned to seat over 60

All these are twin turboprops, much quieter than jets and thus more acceptable to ed-size airfields where noise sensitivities are higher.

Such aircraft are also cheaper to buy and fly, which increases their acceptability to small operators who cannot afford bigger and more expen-

In the jet category, although there is growing use of execu-tive jets for specialist corporate demand is now emerging for bigger jet aircraft, such as the four-engined BAe 146 and the twin-engined Fokker 100, ger payloads are obtainable At the same time a market is

also emerging for smaller types of iets that lie in size betw the corporate aircraft and the Type 146/Fokker 100 - that is, for aircraft of about 48-50 seats. To meet this, two of the bigairliner market, Short Brothers and Canadair, have separately

been studying new regional jet airliner designs.

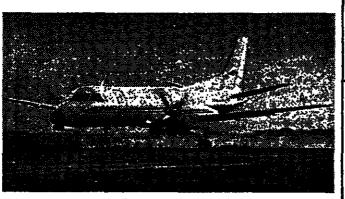
Short Brothers has a design for a 44-seat twin-engined jet, called the FJX, while it is also discussing possible collabora-tion on it with Dornier of West Germany. Canadair is studying a project for a twin-engined

48-50 passenger aircraft called the Regional Jet.
Both companies hope to win enough launch customers to justify starting full-scale devel-opment either later this year or in 1989. In the Short Brothers case, the company is expected to seek UK Government launching aid for the project.

Canadair's view is that in addition to the existing growth in demand for regional transports, the US Government decision to phase out in the early 1990s a large number of aircraft unable to meet the proposed more stringent "Stage Three" noise requirements, is expected to result in the replacement of more than 600 transport aircraft in the DC-9, F-28 and One-Eleven category, creating demand for new small



being operated in Australia by Kendell Airlines from an eved strip at King Island, south of Melbourne



t transport types. Whether either of these new t projects eventually comes The development costs of each are likely to be expensive and it is doubtful whether the ultimate market, large though it may be, could support two such ventures profitably.

It might therefore make aconomic sense for both Short Brothers and Canadair to join forces to develop a common aircraft which would be assured of a world market. In the meantime, Short

Brothers is also considering joining a consortium compris-ing Messerschmitt-Bolkow-Blohm of West Germany and the China Aero-Technology Import and Export Corporation (Catic) on a \$1bn project called the MPC-75.

This would be a twin-engined prop fan powered air-liner for 75 passengers. It would provide severe competition for the current 60-plus seater turbo-prop airliners, such as the British Aerospace ATP and the Franco-Italian ATR-72. The group has set up a special company, MPC-75 GmbH, which will be responsible for planning, managing and mar-keting the MPC-75, which would actually be built by the three partner companies.

The MPC-75 is currently

planned to enter service in 1995

if a production decision is taken. Further partners for the consortium are being cand, with the Japanese serospace industry showing especial interest.

The latter, however, is interested in possible collabo-ration with Indonesia and Singapore on the development of a seat civil transport, for service by 1995, also based on prop-fan engines which would be developed in Japan.

The development cost of such a venture is estimated at about \$300m, to be put up by a joint venture called Heavy Industries, comprising Ishikatries and the Indonesian manufacturer. Nurtanio, with a Singaporean element yet to be

At the same time, however other studies for regional transports have been aban-

One, for example, was a plan by Boeing, Messerschmitt-Bol-kow-Blohm, Fokker and Nurtanio for a new 100-seat turboprop airliner for launch in the 1990s, called ATRA-90 (Advanced Technology Regional Aircraft).

It has been dropped because the current stability of fuel prices, coupled with the improved fuel efficiency of the emerging prop-ian engines, would have limited the savings any such venture could offer. Michael Donne

**AIRPORT EXPANSION** 

# \$200bn spending planned

traffic continues to expand - last year's total of more than 1bn scheduled passengers worldwide is expected to dou-ble by the end of the century and continue expanding there-after - an estimated \$150bn is expected to be spent around the world on the development of sirports and their associated road and rail infrastructures. In addition, it is estimated that approaching another \$50bn will be spent on equipping those airports with all the facilities they will require, ranging from baggage handling systems and information boards through to fire stations, runway lighting and other aids, including advanced air traffic control systems to enable them to cope with the surging tide of passenger and cargo traffic.

cargo traffic.

Almost every country in the world now has plans for expanding its airport capacity, either through building new airports or expanding and modernising existing ones. But all of them, in one way or another, face constraints fro environmental groups which have now become powerful forces ranged against the unin-hibited development of world

air transport. There are other difficulties to be faced, including the need to revitalise the air traffic control system, especially by ensuring that there are enough air traffic controllers - fairly rewarded financially and equipped with adequate mod-ern facilities – to enable them to cope with what is already a serious traffic problem at peak periods but which may well become worse as traffic growth continues into the 1990s.

Solutions to these aspects of the problem lie with governments, which must recognise that air traffic control is the vital "third leg" of the stool on which the whole future of civil aviation rests - the others being the provision of suffi-cient sircraft and adequate sirport terminal and runway facil-ities.

Providing the adequate air-port facilities is currently exercising many governments and civil aviation authorities worldwide, and as almost every air traveller readily ises, there is now hardly an airport anywhere in the world where some kind of modernisation or expansion is not going on. What is less readily apparent

is that behind the scenes there are many plans to build new airports, especially in areas between 7m and 8m passengers



where air transport is still comparatively at an early stage of its development, and where the authorities have recognised that to be without adequate air transport in the remaining years of this century is to rele gate a country to backwater

In all, probably as many as 100 new airports will enverge between now and the end of the century, in such areas as the Middle and Far East, South Bast Asia, China, Africa and Central and South America. Although a number are also lanned in the US and Western Europe, those areas suffer from such high population densities that it is difficult to find new areas sufficiently large and environmentally acceptable for new "greenfield" site airports. As a result, expansion

within them has to be conce trated on improving and extending existing facilities, as illustrated by the decision to develop Stansted as the third major airport for London with the provision of a new £300m terminal; the development of a new £200m North Terminal at Gatwick; and the 280m refurbishment of Terminal Three at Heathrow, with suggestions that a fifth terminal may even now be needed at

especially significant, for that airport is now widely regarded as the "expansion chamber" for coping with air traffic growth in London and South East England, and indicates the scale of the overall UK problem in dealing with excep-tionally high anticipated traffic

From last year's 800,000 passengers, the airport is intended to grow initially to cope with

Further growth to some 15m passengers a year, which is considered inevitable, will require Parliamentary approval, probably involving a major debate in the light of virtually certain fierce environ-

mental objections. Further growth, to 25m passengers a year, will require a second terminal building and involve a major new plan-

ning inquiry.

What happens beyond that remains open. BAA (formerly the British Airports Authority) is currently studying future requirements at all its airports to meet traffic growth, and will present a report to the Secre-tary for Transport some time

At the same time, the Civil Aviation Authority is closely studying a while range of civil aviation issues, including future airport and runway requirements, the need or oth-erwise for special measures to distribute different types of traffic between different airports, and determining how to improve air traffic control further to cope with growth into the next century.

London is one of the few

cities in the world to have a city centre airport, the London City Airport in the now rapidly-developing Docklands. This has been operational for under a year and traffic is expanding slowly. At its peak capacity of just over 1m passengers a year, which may be reached around the early to mid-1990s, it could do much to ease the load on the other South East England airports, especially if approval is granted for jet airliners such as the British Aerospace 146 regional aircraft to use the air-

dence of an upsuree in firm plans for other city centre air-ports elsewhere in the world, but the advent of quieter, more environmentally acceptable aircraft would stimulate demand and also help to spread the load on the major aimoorts.

Elsewhere in the world. major expansion is taking place at the main airports serv-ing Sydney, Amsterdam, Miami and Singapore, to name only a few of the main projects at present, in addition, most African states have substantial projects, including Gabon. Guinea, Kenya, Mauritania and Nigeria. In Zambia, the Government has been working in association with the Japan Transport Consultants Association on the country's surport

expansion plans.
In Australia, the second international airport for Sav-ney is to be built at Badgery Creek, 46 kilometres west of Sydney. The overall cost of the proposed new airport could come to over \$25n. Capacity at the present international airport, at Kingsford-Smith, could be squeezed well before the new airport is able to help take

In Europe, there are expansion plans at most airports, including Rome and Milan. The Rome airport capacity is to be nearly doubled, from 14m passengers in 1985 to 25m passen gers a year. Frankfurt, West Germany

has a \$1.15bn expansion plan for its airport, reflecting the pattern worldwide for more airport capacity to meet the seemingly insatiable demand

130 g 1



Engine power ratings going



Continued from page 3 ever, the propellers are shaped more like ships' screws than conventional propellers, and this together with refinements in the gas-turbines themselves results in substantial reductions of up to 40 per cent in fuel consumption compared

Although much work has

with the current turbo-fan (jet)

joint company, PW-Allison, formed by Pratt & Whitney and Allison, on the 578DX, nelther has yet been committed to quantity production. McDonnell Douglas with its

MCDonnell Douglas with its MD-91 appears closest to production of a prop-fan powered airliner, but although originally intended for service in 1991, the delay in committing the GE-36 engine to production has already obliged Douglas to defer the MD-91's introduction in the consumption cannot be ignored, the airlines prefer to stay with the types of power plant they know, especially while fuel prices remain at the current comparatively low levels.

It is significant that all the major airliners now on offer

Moreover, the airlines so far have remained cool to prop-fans. While they recognise that the claims for large reductions in fuel consumption cannot be

for the remaining years of this century are powered by new or improved derivative versions of existing turbo-fan (jet)

This means that the airlines are already making, and will continue to make, substantial investments in existing let engine technology, and will not readily want to change to prop-fan power, even in the smallest types of airliners, until those investments have

produced profitable returns. Thus the engine and air-frame builders seeking to promote prop-fans, primarily McDonnell Douglas and Gen-eral Electric, with the MD-91. will have a tough fight to con-vince customers that they should move into the prop fan era swiftly.

Michael Donne

# GETHER A BIGGER FUTU

partner to the aerospace industry, having earned a reputation for innovation and leadership through close involvement in many of the world's major advances in flight systems development.

The Aerospace Group has grown year on year serving both commercial and defence market sectors with over 60% going to export.

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Recent new contracts include: le Hight incident Recorders for SH-608 Sea

Hawk - US Navy.

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Together we move towards a bigger and better future in aerospace.

TSMITHS INDUSTRIES Aerospace & Defence Systems THE LOGICAL CHOICE

#### MANY COMMERCIAL and indicates that apart from the industrial organisations and savings in regular air fares and individual business travellers, even overnight hotel bills, especially in Western Europe there are tax and other allowand North America, have be turning to aviation as a means: that make private aviation of improving their communics cheaper than many business tions, thereby expanding their people imagine,

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uons, thereby expanding their people imagine, activities—and profits.

Few who have seriously

They have found that by adopted private aviation as a ment, resulting in steady using any of the wide variety means of promoting their core improvements in performance, of aircraft available to them, porset activities ever regret economy and passenger committeers, they can overcome the investigation of the available. Export sales over the years increasing congestion of sur-options is needed.

Export sales over the years will be fierce, with all of the major US business jet aircraft. face transport. And also - by using the smaller, quieter air-fields that abound throughout both continents - even avoid advises and helps businessmen the increasing congestion at

vacy gained, for even-flying first class or business class on the scheduled airlines is not as conducive to the detailed study of business documents or private business discussions, as airline advertisements may

Another is the saving in costs. While at first sight either owning or chartering a private aircraft may be appear expensive, closer analysis often

en ances in different countries

In the UK, the General Avia-. tion-Mapufacturers & Traders' Association (GAMTA), which and women interested in using major civil adrports.

Apart from the resulting ering purchasing, leasing, or savings in time, and in wear chartering an aircraft, it is and tear, there are other benefits in using a private aircraft should match your own specific needs so far as seating whether it is chartered or owned outright.

One is the much greater privacy gained, for even-fiving the second interested in using aircraft, says. Whether consisted aircraft, it is essential, that the aircraft should match your own specific needs so far as seating capacity, speed, range, level of confort and cost are consorted.

The UK's biggest manufac-turer of business aircraft is British Aerospace, which earlier this summer sold its 700th Type 125 twin-engine jet. No other British jet aircraft has sold in such numbers, and the sircraft is now in service in 40 countries.

Originally designed as the de Havilland 125, the aircraft first flew in 1962 and has been sub-

#### **BUSINESS AVIATION**

#### Means to beat congestion

Export sales over the years amount to more than £1.5bn in 1968 values.

North America is the single largest market for the 125, and accounts for more than 60 per cent of all sales of the sircraft. The 125 now accounts for 53 per cent of the worldwide sales of all types of medium-sized business jets, and the order total is increasing rapidly. During the first six months of this year, sales amounted to 20 air-craft, against 27 for the whole of 1987.

Major recent customers for the 125 have included the US Air Force, which has ordered six aircraft in a \$100m deal to provide aircraft for flight

repection curies.

This deal is likely to help British Aerospace in a major bid for the coming US Air Force contract for a new training aircraft, the Tanker-Transport Training System (TTTS). The USAF is expected to want

manufacturers interested in it. especially Beech and Lear. To help promote its bid, British Aerospace has teamed with Rockwell of the US.

The competition will be fierce because in the US itself the general aviation manufacturing busines has been in the doldrums for some time, with demand falling and some manufacturers closing factories, with the result that every item of defence business is bitterly contested.

However, the situation may now be improving, according to Mr Edward W. Stimpson, president of the General Aviation Manufacturers' Association (GAMA).

He recently reported that in the first half of this year, the number of aircraft produced by the members of GAMA, includ-ing the majors such as Beech, Cessna, Fairchild, Gulfstream,

Learjet and Piper, totalled 551, worth more than \$782m, against 557 worth \$652m in the first half of 1987.

Mr Stimpson suggests that this indicates the industry is now holding its own after the progressive decline of recent years. He points out that the export market is especially strong, with exports accounting for 45 per cent of produc-tion in the first quarter alone. Also, the business jet aircraft market in particular remains strong, reflecting the growing appreciation of industry and commerce of the val-ues of business aviation, with first half-year production of 69

business jets against 56 in the comparable period of 1987, a rise of some 23.2 per cent.

Production of turbo-propeller aircraft has remained steady at 120 against 119, but production of single and twin-engined piston aircraft both declined: twins dropping some 14 per cent from 42 aircraft to 36, and single-engined aircraft falling from 340 aircraft to 326.

In the business jet field,

Cessna led the way with deliveries of 28 Citations, worth about \$140m, followed closely by Gulfstream with 23 of the bigger Gulfstream IVs. worth \$337m; while Learjet delivered 11 aircraft, worth \$43.7m, and Beech delivered seven worth

about \$207m. The US industry continues to be deeply concerned, how-ever, about the impact of product liability, where in the event of an accident - even many years after delivery of an aircraft which has passed through several owners, and even where pilots and owners are negligent - the manufacturers can be, and sometimes are, beld liable in for heavy financial damages.

costs to cover such possibilities have pushed up prices and driven sales down. Some man-ufacturers have even abandoned the production of some models because of product lia-

Mr Stimpson commented that product liability is affecting our competitive position. It

is the single largest cost factor in the production of a piston Bircraft

"Recently, a manufacturer purchased a \$40 part from a supplier and it came with a \$200 surcharge for product lia-

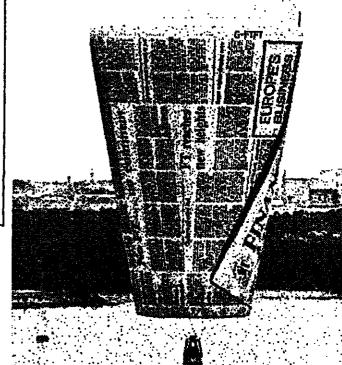
bility. when a manufacturer is held responsible forever. If the Wright Brothers [of 1903] were still flying they would still be responsible today."
Strong efforts are being

made by GAMA to have legislation put through Congress restricting this kind of product liability. Two Bills, one in the

House of Representatives and the other in the Senate, seek to establish uniform product lia-bility standards for general aviation and offer aircraft manufacturers some protection from "frivolous and unjust lawsuits without substantially diminish-

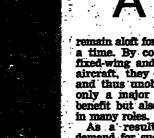
ing the consumers' rights."
GAMA says: "These Bills have moved farther and faster than many would have believed possible earlier this

Year." It believes the legislation could be passed this summer if enough pressure is put on Senators and Congressmen.



AIRSHIPS AND BALLOONS

# A growing world demand



Airship industries' Skyship 600 over London.

INTEREST in lighter than air mies build and export about 500 craft of all kinds is growing hot air balloons of various rapidly worldwide. These include both hot-air balloons for advertising and display, as well as leisure and sport flying, and powered, passenger-carry-ing airships which are helium-

Hot-air balloons are built in the UK by two major compa- be used for a wider range of nies, Cameron Balloons, of work. of Oswestry, Shropshire. a craft able to fly slowly with a Industries, based at Carding-Between them the two compa-high degree of stability, and to ton, Bedfordshire; the

designs a vear.

loons, which are non-powered and non-steerable, are more suitable for advertising and display and leisure flying pur-poses, while airships, which are powered and steerable, can

This includes tasks requiring

remain aloft for many hours at Advanced Airship Corporation attacks for the US Fleet while a time. By comparison with aircraft, they are also quiet and thus unobtrusive - not Airship Industries, an associ-

only a major environmental benefit but also highly useful As a result they are in demand for such work as TV platforms, aerial advertising, sightseeing, and pipeline

inspections and other surveillance tasks, as well as many military duties including coastal patrol and over-thefleet surveillance. Such craft are being developed in a wide variety of designs to suit the tasks envisaged, with such countries as

Australia, Canada, China, France, West Germany, Mexico, and the Soviet Union The UK itself now has several helium airship manufac-turing companies. Airship

(formerly Wren Skyships) in the Isle of Man; and Thunder and Colt Balloons.

ate of the Australian Bond Cor-poration, to date has built 13 craft, including both the small six-passenger Skyship 500 and bigger 13-passenger Skyship Recent sales have included a Skyship 600 to the Tokyo Met-

ropolitan Police for general

surveillance work, one craft for

use as a TV platform for the Seoul Olympics, and another for sightseeing over Tokyo by Japan Airship Services. The company is also currently involved in a joint venture with Westinghouse Electric Corporation of the US to develop a \$169m prototype air-

ship for the US Navy. This craft, called Sentinel 5000, will be more than 400 feet long and is intended to provide a stable platform for Airborne Early Warning of enemy

at sea. The US Navy envisages having a large fleet of such craft eventually.

At the same time, Airship industries is pursuing further export prospects worldwide, with especial interest in a US Customs Service requirement for a fleet of up to 12 airships for surveillance; a requirement by the US Coastguard for airships for pollution patrols; and extensive requirements by security organisations for craft for surveillance and other

The Advanced Airship Corporation of the Isle of Man is currently building the ANR (advanced non-rigid) craft at

its Jurby Airport base. This is a 20-30 passenger air-ship, which is also intended to operate as a maritime patrol craft with an on-station endurance of more than 24 hours. It will cruise at about 40 knots, powered by two Allison (US) turbo prop engines.

Construction of the craft is now well under way in the new airship hangar at Jurby Airport, with completion expected some time early in the New Year. First flight date is not yet set. The company reports a high level of interest from

potential users.
Thunder and Colt, although: primarily a hot-air balloon manufacturer, has also devel-oped a helium-filled airship, the two-seat (pilot pins passen-ger) GA-42, which is now com-pleting its development flying.

The first GA-42 customer is The Airship and Balloon Company, of Stafford Park, Telford, Shropshire, which has ordered two craft. The first is expected to be delivered later this year. Based near Birmingham, it will be used for such tasks as aerial advertising and display as a TV and film camera plat form, and in surveillance and other security roles by the police and other organisations.

THE Financial Times' own as the pilot, is 100 feet tall and aerospace venture, this hot-air balloon was specially built to celebrate the centenary of the newspaper this year. It has been flying frequently throughout Western Europe to

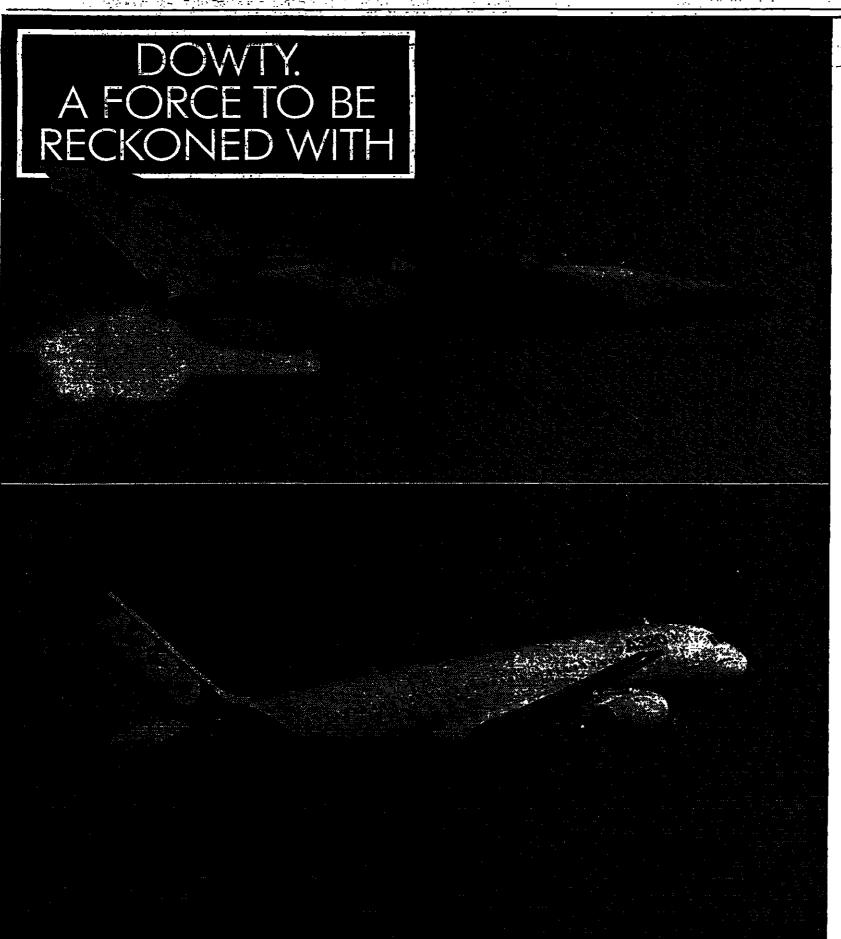
advertise the paper.

The balloon is coloured pink and shaped like a rolled-up FT, showing the front page. It was loons in the UK by Per Lindstrand, who achieved the world record height for a hot air balloon of 20,000 metres, and set the transatlantic nonstop record with Richard Bran-

The FT balloon, which can carry three passengers as well

has 90,000 cubic feet capacity. Operated for the newspaper by the Aerial Display Company, it made its first free flight at the Biggin Hill Air Show on June 19 and has since flown extensively.

baix in France, to celebrate the opening of the FT's new printing plant there, and other cities such as Amsterdam, Copenhagen, Rotterdam, Frankfurt, Geneva, Helsinki, Luxembourg and Stockholm. Further European flights are lanned this autumn, and the balloon may also be taken to



owty presents a formidable force in the aerospace and defence sectors...with Dowty Aerospace committed to the manufacture of landing gear, state of the art propellers, flight control actuation systems, and the Electronic Systems Division focusing the Group's expertise on systems for aircraft and engine control, missiles and antisubmarine warfare.

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As you see, like the Tornado and Airbus pictured here, Dowty is a force to be reckoned with.



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Commercial involvement in space programmes is increasing

Private sector moving in

THE WORLD'S space industry over the next few years looks likely to settle down to a period of steady but by no means rapid growth as some of the uncertaintles inherent in the business start to become smoothed out.

The sector is passing through a consolidation phase between the initial headlong rush into space projects and a further stage in which schemes of this kind begin to produce significant economic returns. Space programmes, according to this argument, were started initially at the beh of governments to provide both military security and a sense of spiritual achievement that vovaging into the cosmos involves.

vital for defence purposes.
At the same time, the advent of manned space flight, in the shape of Yuri Gagarin's epic voyage in 1961, led to a battle for political prestige played out between the US and the Soviet

The early rocket launches were vital for putting into orbit

tary hardware considered to be

spy satellites and other mili-

Today, space programmes are still very much affected by

the twin factors of military involvement and prestige, but with commercial and technological aspects playing a stron-

rely on state organisations if not to foot the total bill then to provide vital infrastructure such as the provision of launch

There has, however, been an increasing interest by the private sector in taking part in space programmes for commer cial reasons. Privately-backed telecommunications companies, for example, are involved in many of today's communications satellite projects.
This is particularly the case

such as GTE and Western purchasers and operators of

The trend has spread in recent years to Western Europe - as is manifested by the plans of Société Européene des Satellites and British Satellite Broadcasting, two private European organisations, to start rival direct broadcasting TV satellite services in the

ger part.
Virtually all space projects

also increasing in the area of launcher systems. Here Arianspace, a French company with a mixture of private and public shareholders, is battling with three US aerospace companies. McDonnell Douglas, Martin Marietta and General Dynamics, for the biggest share of the market for launcher services for non-military satellites.
This market, likely to

15 satellites a year and to add up to some \$800m annually, looks likely to grow at a reasonable rate - though far less quickly than was envisaged a cade ago.

In a move that should boost

strongly the private sector's involvement in launchers, the US Government is leaving the business of putting commercial satellites into space.

The space shuttle fleet, which should be flying again by the end of the year after a gap in missions of nearly three years following the Challenger disaster in January 1986, will be reserved from now on solely for launching military and other government payloads.

Another increasingly impor-

tant factor is a greater understanding of how space pro-grammes can promote technological innovation in ter-restrial industries. The view of how this promo-tion comes about is somewhat more sophisticated than in the early days of spacefaring when

space projects were said, some-times incorrectly, to be respon-

sible for many pioneering

technogical achievements from

microchips to hospital equip-It is now more generally grammes working to strict budgetry disciplines can play a

part in training significant

quantities of engineers and sci-entists in important technologies involving areas such as electronics, mechanical engineering and materials.

These people may have a

wider impact not only through interacting with outside bodies subcontract work and university teams which help out on specialist research projects, ut also by eventually leaving their jobs to work elsewhere. According to this view of

space schemes, the world's big-gest space companies such as Messerschmitt-Bölkow-Blohm in West Germany, Aerospatiale of France and Hughes Aircraft, Martin Marietta and Rockwell of the US are playing a big part by a series of subtle network-ing effects in driving technological changes through their countries' engineering commu-

Most of the \$30bn or so a

year spent on space projects in Western Europe, the US, and Japan on space projects is paid for, despite the interest by the private sector in some of these

schemes, by governments.

This is partly because of the high level of military involvement — some two thirds of the US's \$28bn a year space budget comes from the Defense Department, with the rest paid by the civilian National Aero-neuties and Space Administranautics and Space Administra-

Another factor is the generally-held belief that only gov-eroments are in a position to take the long view of the importance of space operations that is needed if these activities are to be financed.

According to this argument, private companies are interested in backing projects, whether they be on the ground or 200 miles above it, only if they can see the possibility of

commercial returns within a

decade or so.

For many space projects —
the international space station being discussed for the next decade is a case in point economic benefits are likely to be realised only on a much lon-

ger timescale, if at all. Hence, it is argued, the need to involve government plan-ning and finance in many space ventures, and in particu-lar the space station — which is expected to cost \$20bn.\$30bn and involve the US. Western Europe, Japan and Canada.

This view has failed to strike a chord in the UK Government which, over the past year, has caused a stir in Western Europe by refusing to show any enthusiasm for a series of ambitious space schemes organised by the 13-nation European Space Agency.

These projects, likely to cost about \$13bn by the end of the century, involve construction of the Columbus manuel space laboratory (the European con-tribution to the space station), a new form of Ariane launcher, and the French-inspired Hermes space shuttle.

While Britain at the last minute decided to opt for a minute decrees to ope my a minor involvement in Colum-bus - where it will provide 5.5 per cent of the project's cost of about \$4bn - it is not putting up any money for the other

The UK has conveyed its view on this issue with some tenscity, much of it stamming from the involvement in the debate of Mr Kermeth Cierke, the former UK Minister for Trade and Industry, who recently left this job in a government reshuffle to become

Minister for Health. It is surprising, given the strength of the official UK views on the issue, that virtually all the other nations with any expertise in this sector go along with the consensus opinion that government involvement is essential.

For example, most observers believe it impossible that whoever wins the US presidency in the autumn would fail to back a strong and determined US space programme with a large element of federal funding.

Peter Marsh

THE POSSIBILITY developing a second-generation supersonic airliner to replace Concorde either late this century or early in the pext is now

especially in the US. All the major airliner manufacturers have studied this possibility for years, but until recently none has spent any hecause of lack of airline (and government) interest.

This situation may now be changing, for several reasons, One is that Concorde itself, while still good for service through to the end of this century as a result of its current extensive refurbishment programme, will have to be replaced sooner or later.

Because the design, develop-ment and manufacture of such an aircraft is likely to take at least seven to eight years, and possibly much longer if the ed to overcome environmental objections is taken into account, serious consideration of such a venture ought to

start soon. Second, the view now emerging in the US is that with the growing importance of the Pacific basin both strategically and economically, faster trans port between the US and the Far East is essential by the turn of the century - with either a second-generation supersonic, or even hypersonic, transport as the only answer.

At the same time, work now under way in the US on what are called "Transatmospheric vehicles" (TAVs) or "aerospace - vehicles that can planes" use existing airfields, soar into earth orbit, and land again like conventional aircraft - is spearheading advances in aero-space technology that could be relevant to supersonic or

hypersonic transports.
As a result, interest in sec ond-generation supersonic airliners in quickening. Aerospa-tiale itself, one of the original partners in Concorde, has undertaken studies for such an aircraft, but has so far got little

In the US, the National Aeronautics and Space Administration has promoted aerospace industry studies to establish the most suitable parameters of any eventual second-generation supersonic airliner, which it calls broadly the High Speed

Civil Transport, or HSCT. The two major manufactur-ers, Boeing and McDonnell Douglas, have already submitted preliminary reports. After studying them, Nasa must decide its next step — either to pursue the research, or drop it. Boeing's view is that the

least expensive aircraft to develop would be similar to Concorde in design, with a top speed of about Mach 2.2 (just over twice the speed of sound or about 1,200mph), using existing types of aviation fuel

Stepping beyond Concorde but carrying a much larger payload - 200 to 300 passeninland airports, so that super-sonic speeds could be reached

gers against Concorde's 100. The company argues that the technical problems of developing a faster aircraft would lead to higher costs, without offering any significant benefits since much of the time saved in higher cruising speeds would be lost in climbing and descending at sub-

McDonnell Douglas, however, prefers a faster aircraft, capable of five times the speed of sound (Mach 5 or about 3,500 mph) over trans-Pacific distances, from, say, New York to Tokyo and Beijing, San Francisco-Hong Kong and Los-An-

eles-Sydney. Mr Don Graf, Douglas Aircraft's advanced projects manager, believes that by early next century there could be a market for more than 1,000 second-generation HSCTs, provided that such problems as financing and the sonic boom can be overcome.

The sonic boom problem perhaps could be overcome by flying much higher than the 60,000 feet of Concorde, but it could still be a problem at port

HYPERSONIC FLIGHT

only over the oceans. Financing also remains par-ticularly acute. No single company could afford the \$10bnolns that such an aircraft would involve. The US aerospace industry as a whole might be able to undertake the venture technologically on a joint industry-wide basis, but would certainly need extensive Government cash support.

Moreover, the US Government would probably insist on international collaboration to reduce the bill and widen the potential market.

Likely participants would be the UK and French industries, the original Concorde producers, possibly together with Japan which would have a strong interest in such an aircraft because of Japan's strategic Far East location.

So far, there are few signs of any such collaboration emerging. Athough Nasa is encouraging the research, it does not have the budget to fund any full-scale venture, and would have to obtain Government cash to pursue such a development, even with industry supapproach.

Western Europe, the British Aerospace and Aerospatiale, are interested, but have no money, and stress that any HSCT would have to be remment financed

But no European government, with the experience of Concorde's financial, technological and sociological development difficulties in mind, is so far prepared to support such

Before governments can be rsuaded even to consider any HSCT, the aerospace industries in various countries will have

to sharpen their collective

They will need to undertake extensive research, produce highly-detailed analyses of development and production costs, and whip up the currently dormant or non-existent interest among the airlines.

It might be easier to wait for any second-generation super-sonic or hypersonic airliner to evolve as part of the spin-off from the current efforts in the US to develop the technologically more advanced earth-te-orbit "Trans-atmospheric vehicles" (TAVs), or "aero-

Although designed for more advanced roles than any second-generation HSCT, aircraft will spawn all the major advances in power plant and other technologies that any HSCT might require. In the US, the National Aero-

space Plane (NASP) X-30 venture is already under way, pro-viding for unmanned development models to fly in development models to my management 1993. This is to lead to a full-scale manned vehicle later in the decade, initially for military space missions but even-tually also for commercial

Similar plans for such vehicles have been studied in the UK -- the Horizontal Takeoff and Landing (Hotol) project by British Aerospace and Rolls-Royce, and in Western Germany the Saenger concept. But the UK Government has said it does not intend to support the Hotol venture further

financially, and it is now up to British Aerospace and Rolls-Royce to win support for the idea elsewhere.

The most likely way ahead for this venture in Western Europe would now appear to be through the Europ Agency, which itself is interested in the long-term possibilities of such earth-to-orbit vehicles. But so far, even the

ESA is dependent on govern-ments for financial support. In the US, however, work is being pushed ahead under the Nasp programme, and once the validity of all the advanced technologies in metallurgy, ceramics and other materials, and in fuels and on-board systems has been deomnstrated, the potential spin-off for the development of second generation HSCTs seems likely to become much clearer.

Michael Donne

#### **NEW MATERIALS**

#### Advanced lessons in Hotol

is the space plane that could put Britain in the vanguard of cut-price satellite launching posities. sometime early in the next cen-

But for realists in the British aerospace industry it has a more down-to-earth role. It is a test-bed which could help to pull through much advanced materials technology and assoclated manufacture, in readiness for new generations of military and civil aircraft.

Hotol is a hydrogen-fuelled rocket which sims to burn air for the first few minutes of flight to minimise the amount of liquid oxygen it needs to carry. To do this some difficult engineering problems must be solved that arise with an atmospheric oxygen intake that grows thinner and colder as Hotol increases in altitude, but hotter as it accelerates.

Rolls-Royce, which has acquired the patents from the inventor, Mr Alan Bond, and has designated the engine RB-545, says it has never considered the engine as anything but a propulsion system for space launches. Nevertheless, the engine technology will advance its experience of high-speed propulsion in the regime Mach 2 to Mach 8. But operating temperatures envis-aged for the RB-545 are little-different from those it expects to meet in military engines in the next 20 years.

Rolls-Royce engineers believe bigger advances in materials technology will be demanded of the airframe engineers, who must seek to min-imise the weight. Hotol, although expected to improve on the poor payload-to-weight ratio of current satellite launchers, with only about 1 per cent of their launch weight as payload, is still rated at best only at 3-3.5 per cent. It is expected to take the best

endeavours of the materials technologists of British Aerospace to achieve such a figure
- still only half what Con-

To achieve the target pay-load-to-weight ratio, much of the airframe would be made of either carbon-fibre composites or metal matrix composites, with nickel alloys needed to withstand temperatures exceeding 1,700 deg. C expected to be found at the vehicle's fin.

"In an engineering company, the main concern is the acquisition of sufficient knowledge about the materials to enable the designer to form them into artifacts with high confidence in the ultimate performance, says Dr Robin McEwen, head of materials science research

of materials science research at BAe's Sowerby Research Centre, near Bristol.

Dr McEwen says his company has responded to reductions in the R&D effort on new materials by the defence research establishments in Britain, by establishing Sowerby as a corporate research laboratory "to address long-term basic issues in materials and other research."

rials and other research." BAe is a big customer for advanced materials, spending about £100m a year on top-quality materials, including

Structural composites are already deeply entrenched in BAe's thinking, especially for military alreadt. Use of carbon fibre, established with the Jaguar and Tornado aircraft, has been increasing to the point where the company believes 40 per cent by weight and 60 per cent of the operational surface airframe - for the European Fighter Aircraft - could be made from carbon fibre com-

posites (CFC). Reinforced metals, also known as metal matrix composites (MMO), have improved to a point where they now offer airframe designers dramatic enhancement of strength compared with un-reinforced met-

Dr McEwan says: "Many components of the current range of civil airliners have en identified as suitable for MMC." In the case of the Airbus, these include body skins, slat (flap) tracks, and wing and

engine struts.
Such conclusions have led British Petroleum to believe that advanced engineering materials are destined to become what Dr Robert Mal-pas, its technical director, calls a mega-business of the next

century. BP has mounted a major R&D effort into MMCs.
Dr Malpas says a Hotol project could provide an excellent focus for companies to collaborate in the development of advanced aerospace materials. Dr Stephen Bold manager of BP's advanced materials R&D st Sunbury-on-Thames, identi-fies four types of MMC:

• Melt-infiltrated refractory

fibre - which can be used to make modest improvements in the high-temperature strength of aluminium alloys, by diecasting them round a preform of refractory wool (such as BP's own Fibrefrax);

• Particle-reinforced composite — which can be used to make modest improvements in strength but big improvements in the stiffness of aluminium alloys, by adding silicon carbide grif to the cast or powderforced match. formed metal;

• Whisker-reinforced com-

but are more difficult and therefore more costly to make; Continuous-fibre composites – which can greatly enhance strength, stiffness and high-temperature properties of titanium as well as aluminium alloys, but are costly, currently

alloys, but are costly, currently exceeding \$1,000 per kilogram. Dr Bold says the continuous-fibre MMCs will find markets in the least price-sensitive sectors, such as space and defence. Reinforced aluminium will be used as struts and stiffeners in airframes while tita-nium MMC will be used for hindes, discs and shrouds in sero-engine gas turbines.
BP is making monofilament reinforcement and developing

composites, but he believes Avco in the US is the front runner in the field today. A small start up company

which has spotted a niche in the aerospace market for reinforced thermoplastics is Shrinemark with its uncrushable tubes made from braided fibres of carbon, Kevlar or

Its process combines timehonoured textile practice with polymer science to make small-bore tubing for aircraft cooling ducts — lighter than alumination ducts and more easily installed, the company claims. The material also resists slopped Coca-Cola, which can wreak corrosive havor with aluminium fittings

Dr. Bob Jeal, chief of materials and mechanical technology at Rolls-Royce, forecasts that at Rolls-Royce, forecasts that military demands will lead to an engine built largely of non-metallic materials by the year 2010. He suggests that nearly 60 per cent of the engine would consist of two types of caramic composite — either MMC or ceramic-matrix composites (CMC).

(CMC) "Continuing development of metal alloys cannot provide the properties needed for the major performance advances required beyond the year 2000," Dr Jeal says. He believes changes in design, materials and manufacturing technology will all be required to make the next leap ahead in perfor-

His targets include a thrustto-weight ratio of 20:1 and a reduction in mission fuel burn,

each case. He believes they can be met 50 per cent by better design, and 50 per cent by better materials.

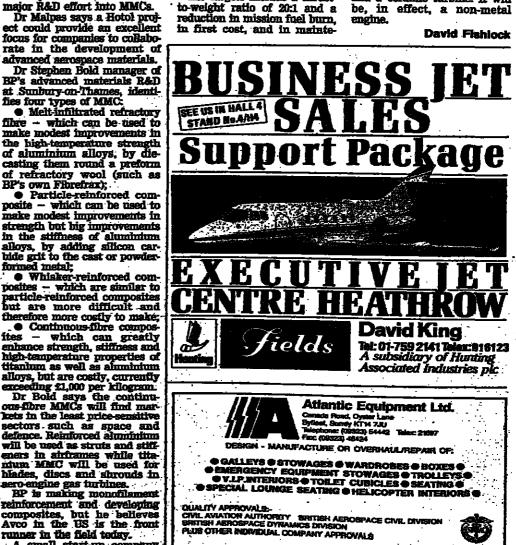
The new materials on which be is ninning his faith are composites containing ceramics either as reinforcement or as the matrix, or both. They can-not be directly substitutes for current alloys because they will behave differently.

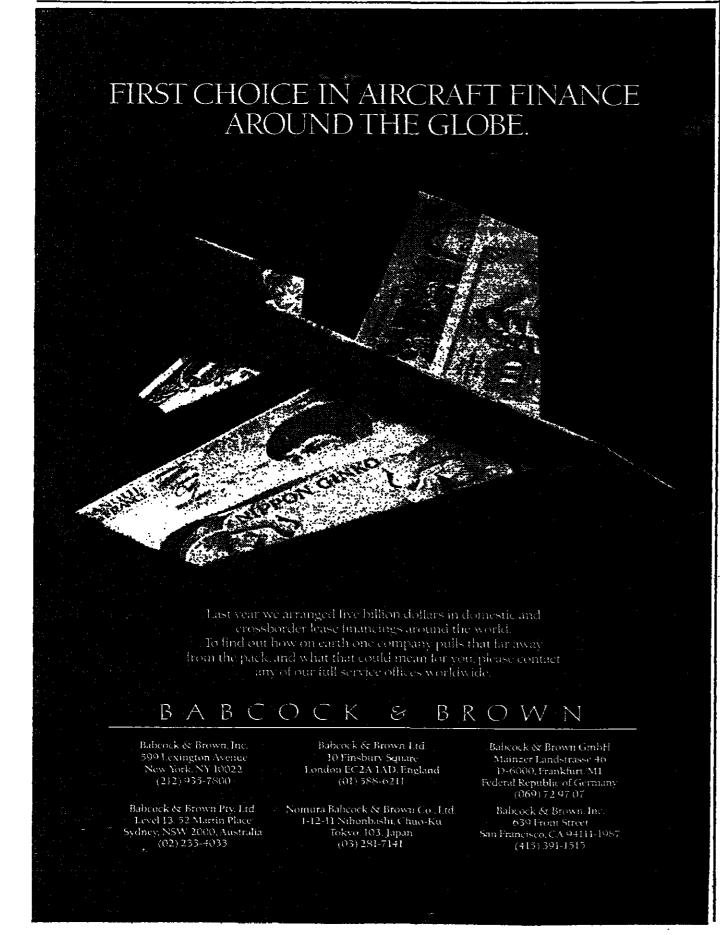
They will demand radical hanges in the way engine components are designed and manufactured." He believes there will have to be a much closer integration of design and manufacture. Silicon nitride and silicon

carbide seem to offer the greatest potential for use in the gas turbine. Above 1,000 deg. C. they are stronger than nickel superalloys, more creep-resistant, less corroded, and potentially cheaper. They are also much lighter - less than half as dense

Unfortunately, they are also brittle, sensitive to flaws and hence unreliable. "The plastic flow which occurs with ductile materials is not possible," Dr

Jeal acknowledges.
Nevertheless, he is sufficiently confident that these disadvantages can be circumvented to forecast that the military jet engine of 2010 will have a composite compressor and a ceramic turbine. It will





Military spending will remain high into the next century

DESPITE GROWING pressures to cut defence budgets in the Western world, it seems likely that spending on military air-craft will remain high through-out the remaining years of this

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One estimate, prepared by British Aerospace, is that between now and the year 2010, some 22,000 combat and jet trainer aircraft will be delivered, worth (at today's prices) about \$550bn.

Nearly 9,000 of these are already committed, either for existing orders, or through plans for such major "next generation" programmes as the European Fighter Aircraft (EFA), and the Advanced Tactical Fighter (ATF) for the US rent world inventory of combat Air Force and the Advanced and jet trainer aircraft stands. Tactical Aircraft (ATA) for the at about 29,000 aircraft. Most of US Navy. In fact, nearly 5,000 of these committed deliveries are for aircraft of US design origin, especially with the two

latter aircraft.

Over the same timescale, it is estimated that some 3,200 military transport aircraft of various types will be needed, about half of them in the C-180 Lockheed Hercules size bracket for that four turbo-prop engined aircraft has been one

of the great success stories in military transport production. with more than 2,000 sold and production continuing even while the search for a suitable replacement has yet to reach a

conclusion.
This demand for transports (including special-purpose types such as Airborne Early Warning Aircraft, anti-subma-rine warfare afroraft and tank-er-transports for aerial refuelling purposes), is likely to amount to an additional \$150bn at today's prices. As a result, total military aircraft spending seems likely to amount to some \$700bn up to the year

2010. It is estimated that the curthe first generation of post-war jet fighters have now been phased out, and many of those aircraft now in service are jet fighters of later vintage. But many of these will need to be replaced over the next

decade or so, not so much because they are ageing in each case are likely to be substantial. indeed, many of them still have considerable service lives ahead — but because they Beneath those aircraft, however, there is an expanding market for smaller, cheaper and less sophisticated light -have been overtaken by the

super powers,

smaller countries.

However, many of them can,

and will, find uses in support-

ing roles or in the air forces of

diverging trend in military air-

craft design. At the top end of the scale are the costly and complex highly advanced

supersonic air-superiority fighters (such as the ATF and

the ATA mentioned above).

There will be comparatively few individual types of such aircraft developed in the

remaining years of this cen-

tury, because of their vast costs, but the production runs

At the same time, there is a

development of avionics and combat aircraft — the British early July. Saudi Arabia is engine technologies and are Aerospace Hawk 200 is a classically buying 72 Tornados in thus no longer suitable for sic example — for battlefield an earlier defence deal. sic example - for battlefield support in particular, and it seems likely that much of the frontline service with the estimated spending of \$550bn will be on this type of aircraft.

In Western Europe, the longrunning Tornado remains a major programme, with several years of quantity production to run. Athough 809 aircraft were originally ordered, subsequent additional orders for both export and to meet increased requirements from the UK. West Germany and Italy have already increased the total to 933, and further contracts in negotiation seem likely to eventually to lift Tornado production to well over 1,000 air-

One major new order in prospect is that for additional Tornados for Saudi Arabia, under the major defence procurement Memorandum of Understand-ing signed with that country in

It was also revealed earlier this summer that the Nato management agency running the Tornado programme on behalf of the member-governments had asked Panavia, the prime manufacturer on the programme, to quote for a further batch of 100 Tornado aircraft, comprising 26 Interdicter Strike (IDS) models and 15 Air Defence Variants (ADVs) for the RAF, 35 IDS for the Luftwaffe, 16 electronic combat and reconnaissance (ECR) vari-ants for the Italian Air Force and eight IDS for the Royal Jordanian Air Force.

The most significant military aircraft development on this side of the Atlantic in recent months, however, has been the formal go-ahead for full-scale development of the European fighter) by the Governments of

**Eurofighter sustains jobs** the UK, West Germany, Italy and Spain.

This plan to build more than 800 aircraft, worth in all over £20bn, will keep the aerospace industries of all four countries fully employed through into the next century. Eurofighter, and its associated EJ-200 engine, will gradually replace current Tornado work as the latter runs down.

Work on the Eurofighter airment of Eurofighter Jagdflugzeug, based in Munich, set up by Messerschmitt-Bolkow-Blohm, British Aerospace, Aer-italia of Italy and Construcciones Aeronauticas SA (Casa)

The EJ-200 engine for the air-craft is being built by Eurojet-Turbo, set up by Rolls-Royce, Motoren- und Turbinen-Union (MTU), Fiat Aviazione of Italy and Sener Ingenieria y Siste-

The development programme

of the Eurofighter will centre on the construction and flighttesting of eight prototypes, including two trainer versions. A further two airframes will be

built for ground tests. Each nation will build at least one prototype to gather experience of final assembly before going into full production. The British Aerospacebuilt EAP (Experimental Aircraft Programme) advanced technology demonstrator air-craft, which first flew in 1986, will be used as a "flying test rig" to support EFA develop-

The EFA is due to enter service in 1995. Development costs will be shared 33 per cent each by Britain and West Germany, 21 per cent by Italy and 13 per cent by Spain.
The French rival to the

Eurolighter, the French Dassault Rafale, has won a French Government contract for five prototypes, three for the Air Force and two for the Navy, with the first due to fly in early 1991.
But Dassault has not yet

won any international part-ners, although it has offered Belgium a 10 per cent share in the development programme

and is also wooing Spain. The Rafale will be flying at the Farnborough Air Show.

Possible new ventures in military aircraft for the future beyond the EFA include supersonic derivatives of the exist ing Harrier vertical take-off and landing fighter (Vtol).

Rolls-Royce, British Aerospace and McDonnell Douglas of the US have been studying both the possible airframe designs and engine types that might be suitable for such an aircraft, but so far no firm decisions to go ahead with such a venture have been taken.

However, such a development from the Harrier stable could face a competitor from elsewhere in the US industry. Lockheed has disclosed that under the first phase of a twophase contract from the National Aeronautics and Space Administration, the Lockheed Acronautical Systems Company (LASC) is developing a "conceptual design" for a supersonic short take-off and vertical landing (Stovl) fighter for the year

Michael Donne

ONE OF the most significant maiden flights in aviation his tory is expected to take place this autumn at Fort Worth, production "tilt-rotor" sircraft

leaves the runway. This unique aircraft, called the V-22 Osprey, is under full-scale development by Bell Helicopter Textron of Fort Worth, and Boeing Helicopters of Philadelphia, for the US armed forces, under a \$1.81bm

The aircraft has two Allison T-406 turbo shaft engines, each with a large rotor, mounted at the end of each of its stub wings. The engine/rotor units can be tilted (with the wings remaining stationary) to allow vertical take-off and landing like a helicopter; but once the aircraft is airborne they are tilted to the conventional propeller position for forward flight.

The result is an aircraft of exceptional operational flexibility, capable of combining the vertical take-off and low speed characteristics of helicopters with the speed — up to more than 360 mph — of a tur-bo-prop aircraft. The range on full payload will be over 500 nautical miles.

With such a performance, it is claimed that the Osprey can fulfill a wide variety of mili-tary requirements as well as civil aviation needs. For exam-

ple it will be an answer to the increasingly serious congestion problems at airports worldwide by making air services availspecialist tilt-rotor "verti-

The success of the tilt-rotor aircraft in its initial military role is likely to speed its acceptance for commercial use. Inftially, however, Bell-Boeing are developing it under a US Navy contract. Six prototypes will be built, but eventually nearly 1,200 V-22s are expected to be used by all the US armed

The US Navy is buying 50 for search and rescue, logistical support and special warfare; the US Marines 552 for amphibious troop assault and support; and the US Air Force will take

50 for special operations. In addition, a further 300 Ospreys for naval anti-submarine warfare are planned, while the Army may buy up to 230 for special operational missions and medical evacuation. First deliveries are due in the early 1990s.

Other countries are studying the concept. In the UK, British Aerospace is associated with Bell-Boeing in tilt-rotor studies, initially for military use, but with eventual civil applications also in mind, while Bell-Boeing is also working with Dornier in West Ger-

#### TILT-ROTOR FLIGHT

# All eyes on Osprey

BAe's studies include Special Operations Warfare/Rapid Deployment, where tilt-rotor aircraft could be used to put armed troops deep into enemy territory, and retrieve them, without the need for refuelling

the aircraft.
The tilt-rotor, in BAe's view, is the only effective vehicle for this type of long-range special operations mission, and far better than any helicopter, which would have less range and payload, and be slower. In fact tilt-rotors could eventually rival large helicopters in a wide range of civil and military

In Japan, Bell-Boeing have signed a pact with two leading trading companies, Mitsui and C.Itoh, to assess the military tilt-rotor markets in that coun-

Extensive civil studies have also been conducted in the US, by a Bell-Boeing team supported by Boeing Commercial Airplanes, the National Aeronautics and Space Administration (Nasa) and the Federal Aviation Administration (FAA).

This has examined the use of tilt-rotors in a wide range of sizes carrying from eight to 75 operations in such markets as high-density metropolitan and low-density population centres, cargo/package express operations, public services, and

resources development. In such roles the civil tilt-rotor is regarded as a unique vehicle with a large market potential, superior to multi-engined helicopters under most operating conditions.

But it is recognised that ultimate success with civil tilt-rotors must depend heavily on success in the military market, with defence funds bearing the brunt of development costs.

The study team also stresses that some additional work is needed to maximise the tilt-rotor's competitive economics, through the application of advanced technology and inno-vative design. To ensure this, a national civil tilt-rotor transport plan, including suitable infrastructures such as vertiports, and a technology demonstration programme, are

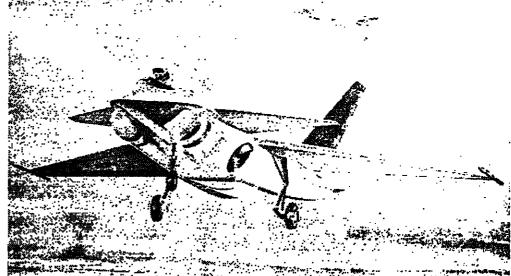
The FAA has embraced the tilt-rotor concept with enthusi-asm. Earlier this summer, Mr Alan McArtor, the administra-tor of the FAA, said he believed the FAA would be in a position to certificate commer-cial tilt-rotor type aircraft for flight demonstrations as early

This is based on an agreement between the FAA and the US Department of Defence to give FAA access to military technology on tilt-rotors. thereby saving "five to eight years" in the civil certification

The FAA has set up a civil tilt-rotor co-ordinating office, reporting directly to Mr McArtor, to facilitate all FAA activities in tilt-rotor developments while the FAA has also allocated £3m for tilt-rotor research and development, including planning for instrument approach procedures to verti-ports, airborne systems, air traffic control procedures and verti-port designs.

A rival to the Bell-Boeing

The proposed European aircraft is designed to carry about



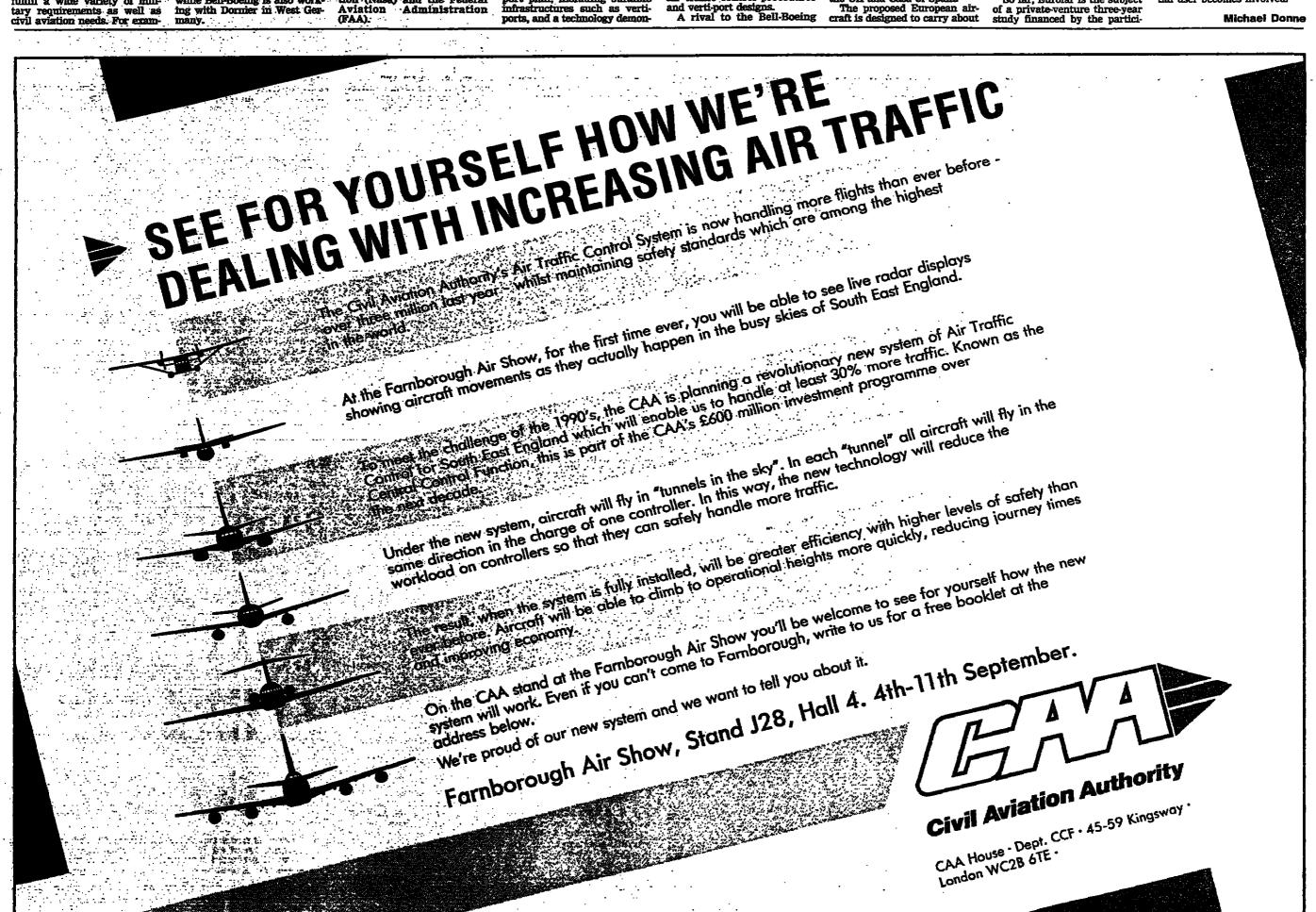
Artist's concept of a Lockheed supersonic STOVL (short take-off, vertical landing aircraft) lighter aircraft for the US forces in the 21st century. It would have a single vectored-thrust engine that diverts air downward and use composite materials extensively in the airframe.

tilt-rotor is already being studied in Western Europe, by a knots over distances of some pating companies, of which about two years has still to consortium called Eurofar Œuropean Future Advanced Rotorcraft), which includes Aerospatiale of France, Aeritalia and Agusta of Italy, Mes-serschmitt-Bolkow-Blohm of West Germany, Westland of the UK and Casa of Spain.

well behind the Bell-Boeing tilt-rotor though, largely because it has no government funding as yet, and initial deliveries are not planned before the end of the century. So far, Eurofar is the subject

of a private-venture three-year study financed by the partici-

The future of the European venture clearly must depend upon governments becoming military vehicle, unless a commercial airline or other poten-



Higher development costs are forcing companies to collaborate

#### More missile project links

THE GUIDED weapon sector of the world aerospace industry has entered a stage in its evo-lution where missiles are

becoming more intelligent, autonomous and deadly. They are also becoming much more expensive to develop and few of the latest guided weapon projects are controlled by single companies. The emphasis in the West is

on multi-national developments in missile technology, but as some of the biggest and most important joint missile programmes demonstrate, reaching full agreement between the partners is difficult. As a result, standardisation of missiles among Nato

At the same time, the missile manufacturing sector is changing, with growing missile man-ufacturing capabilities developing in several countries

including Japan.
Two of the most important current missile programmes illustrating these developments are the linked projects for the European advanced short-range air-to-air missile (ASRAAM) and the US advanced medium-range air-to-air missile (AMRAAM). Both missiles are likely to

become the standard air-to-air guided weapons for Nato into the 1990s and the next century, involving high-volume production, running into several thousand missiles.
The missiles are designed to

be of the "fire and forget" type and will operate autonomously once fired from an aircraft. AMRAAM can hit targets

beyond visual range.
The development of ASRAAM is a joint project involving the governments of the UK, the Federal Republic of Germany and Norway. The aim is to produce in Europe a new short-range missile for arming fighter aircraft to meet a Nato

ASRAAM is to replace existing short range air-to-air missiles such as the US Sidewinder and to provide Nato air forces with an agile fire and forget missile based on advanced infra red sensing technology and fitted with an infra red proximity fuse. The wingless missile, essentially a simple tube with small fins at the rear and a seeker head at the front, will be capable of being fired from aircraft at large angles off the boresight

of the aircraft.
The lead contractors nominated by the governments are British Aerospace, Bodenseew-erk Geratetechnik and Raufoss Ammunisjonsfabrikker. The project definition phase for ASRAAM was completed last last year and full development and initial production of the



Performance trials of the Canadair CL-289 surveillance drone being carried out by the West rman Army. Fired from a truck launcher, it is powered by a turbojet engine

missile is expected to begin A number of other European

companies and Garrett Manufacturing in Canada are also Initially, a joint company, BBG, formed by Bodenseewerk Geratetechnik and British Aerospace, was responsible for managing the project. This

ASRAAM. The BBG company ceased to operate.

BAe said the decision was made "to obtain a more balanced partition of responsibility among the European partin armament ners

ish Aerospace was nominated the prime contractor for

programmes."
EURAAM, a UK joint venture company involving Messerschmitt-Bolkow-Blohm and AEG of West Germany, BAe and Marconi Defence Systems, is likely to go to Germany. EURAAM was formed last year to compete for European manufacture and support of the US advanced medium range air-to-air missile, AMRAAM, produced in the US by Hughes

and Raytheon. The award of the prime contractor role for ASRAAM to British Aerospace and the likely transfer of EURAAM to Germany, effectively puts BAe into the lead position on the short-range missile and Germany into the lead position in Europe on the US medium-

been under way since 1980, when a memorandum of understanding was signed by the US, the UK and West Germany as participants and France as observer. A second memoran-dum was signed in 1984 to bring Norway into the pro-

between the US and European NATO members for a family of weapons, with ASRAAM to be developed in Europe for Europe and the US and AMRAAM to be developed in the US for the US and Europe. Although ASRAAM is a joint

project involving the governments of Britain, Germany and Norway, the memoranda of understanding, signed also by the US, allows for the produc-tion of ASRAAM in the US as well as in Europe.

AMRAAM production for the

European members of Nato may be in Europe, provided suitable terms can be negoti-ated between EURAAM, or its successor in Germany, and the US AMRAAM International Licencing Company, the joint venture between Hughes and Raytheon, the second US source of the missile.

The US companies would probably prefer to sell US-made AMRAAMs to Europe even though the US remains undecided on whether to buy the European ASRAAM under the terms of the MoUs, West Germany and Britain are almost certain to want to fit the AMRAAM to its squadrons of Eurofighters, to German Phanrange missile. Eurofighters, to German Phan-tom fighters and UK Sea Harriers and Tornado F3 intercepbility for several years and decided in June to incorporate "weapons" in its articles of association. These weapons will include

These weapons will include rockets and missile propulsion systems for Japan's self defence forces. Nissan's sales of military equipment accounted for less than one per cent of its turnover last year, but the company plans to increase this to more than 10 per cent. Nissan also wants to take part in the US strategic nce initiative, the "Star

Wars" programme. In the US, the Army is considering a fire and forget ver-sion of the Martin Marietta Copperhead anti-tank guided projectile, which will seek its own targets independently. The present Copperhead is fired from conventional 155mm howitzer guns.

Intended targets are illuminated by laser from helicopters, remotely piloted vehicles or ground based units and the Copperhead projectiles then home in on the laser energy. Martin Marietta is to produce 3,600 of the weapons under two recent US Army contracts, totalling \$122m. This will extend production of Cop-perhead into 1990....

In the field of anti-missile missiles, the US and Israel have been discussing a memorandum of understanding for the joint development of an anti-ballistic missile. The new missile is code-named Arrow and the US is considering putting up 80 per cent of the estimated initial cost of \$400m for the short-range missiles, which are due in service in the early

The question is, where will these missiles come from, the

US or indigenous European

One of the most important

wholly European missile pro-grammes is the tri-national

plan for a third generation of

medium and long-range anti-tank missile systems. The go

ahead for the missiles came

earlier this summer when the

French, British and West Ger-

man governments signed two memoranda of understanding

to launch full development of

by Euromissile Dynamics

group (EMDG) and its parent

companies, Aerospatiale, Brit-

ish Aerospace and Messer-schmitt-Bolkow-Blohm. The

Euromissile group is in effect the focus for an emerging

European-wide guided missile industry, as each country seeks to share the costs of

The anti-tank missiles are

expected to enter service in the

mid-1990s. The medium-range

missile will ride on a radar

beam to the target. The

long-range missile will be

autonomous after launch and

find its own way to the target.

The French and German

defence staffs have chosen this missile for the PAH2/HAC com-

bat helicopter under develop-

Guided missile technology is

not restricted to members of

Nato. In Japan, the Nissan

Motor company, famous for

cars, has been quietly develop-ing a defence equipment capa-

Early airframe structures of

carbon-fibre composites, such as those for the Jaguar, relied

on mechanical fastening of

wing skins to ribs. But a newer

manufacturing process is to co-bond one wing-skin to car-

bon-fibre composite (CFC) spars without fasteners, in an

developing future weapons.

The signature was welcomed

sources?

In the political sphere, the US and the Soviet Union have agreed to the destruction of all intermediate and shorter range nuclear missiles in Europe under the terms of the intermediate nuclear forces (INF)

This was the first time any category of missiles had been negotiated out of existence, but already the UK is considering upgrading its nuclear forces with an air-launched stand-off missile to be delivered from Tornado bombers.

The UK and France have had a series of meetings on this proposal, with the French keen to offer its own ASMP nuclear stand off missile for further development to meet British requirements for an extended range stand-off missile.

France is to fit the ASMP to its Mirage 2000N aircraft and to Super Etendard carrier borne aircraft to form a new pre-stra-tegic nuclear arsenal, formerly the French tactical nuclear

Also in France, Matra recently received its first pro-duction contract for the Mistral very short range, infrared guided ground-to-air missile from the French General Delegation for Armament.

Lynton McLain

Force Base "is pioneering in new technology with applica-tions in strategic defence and other systems requiring preci-son optics". The aim is to reduce dependence on lengthy hand-polishing by "master opticians".

For example, a diamnd cut-ting tool is being used to

machine surfaces to an accuracy of a few millionths of an racy of a few millionths of an inch. It operates from an airbearing table and has a laser-guided positioning system to measure the position of the diamond tip relative to the mirror. It is said to produce an optical mirror surface in only 20 withten where head policies. 80 minutes, where hand-polish ing needs two or three months to achieve the same finish. The director of the facility is quoted as saying: "we're going from making optics the old-fashioned way into some-thing we'll turn around like hubcaps."

**David Fishlock** 

**AVIONICS** 

#### A critical sector

AVIONICS, the generic term encompassing all the electronic systems used in aircraft, engines, missiles and space-craft, is now one of the most critically important sectors of the entire world aerospace industry.

For as the costs of develop-

entire aerospace spectrum have risen, resulting in fewer major new types of civil and military aircraft, so have the demands for more efficient and sophisticated avionics systems. The peripheral infrastruc-tures of aerospace are also heavily dependent on improve-ments in avionics systems notably air traffic control where the problems of han-dling increasing volumes of aircraft movements could not be solved with the use of advanced radars and high-speed data transmission and other information systems.

The overall problem of rising costs is probably the most serious issue confronting the avionics sector of the entire sero-space industry. The cost of research is rising as answers are sought for increasingly complex operational and tech-nological problems, while the costs of translating those answers into functioning hardware for incorporation into military and civil aircraft are

One has only to recall the soaring costs of the original UK airborne warning and control system, eventually can-celled in favour of procure-ment of the US Boeing AWACS system, to recognise just how difficult and expensive the solution of complex avionics

problems can be.
As a result, as with other types of equipment companies, to overcome the problem many avionics companies have either merged, or are combining with their counterparts in other countries to bid for specific contracts on major new ventures, such as the European Fighter Aircraft and the Airbus A-330 and A-340 airliners.

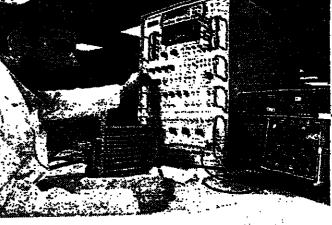
Without such links, some companies would stand little chance of winning any new business, and it is possible that where either individual companies or combinations of companies do not win specific con-tracts, they could face a bleak future through the remaining years of this century.

Commenting on this prob-lem, the Editor of Jane's Avionics, regarded by many as the "bible" of the avionics indus-try, has said that "of all the industries which serve to employ man, defence electronics, and in particular avionics, probably turn more skills into dollars, pounds and francs than any other", with billions of monetary units being spent purely on research to ensure that one company can either keep up with or leapfrog

However, this vast amount of research provides some eso-teric products, "many of which are late and over-budget sim-ply because the technological challenges are so great and are growing so fast," Jane's

No sooner has a project started with a certain goal than technology bounds onwards, so the project has to leap even faster just to keep pace. Why does it have to keep pace? Well, if your company or air force doesn't, someone else's will, and either way you're out of business."

Nevertheless, overall the avi-onics industry is exceptionally busy. It has been estimated that, with close to one third the cost of a new military or civil aircraft being accounted for by all the systems and



ician tests a valve control unit for the RB-211-535 engine, which powers the Bosing 757 twin-jet airliner

equipment it contains, avionics accounts in turn for at least half, if not more, of that.

Figures issued by the Society of British Aerospace Companies show that during 1987 the avionics industry in the UK contributed directly no less than £358m towards overall aerospace exports, and this figaerospace exports, and this fig-ure does not include those avionics systems incorporated into the aircraft, engines, missiles and spacecraft exported.

One of the reasons for the increasing emphasis on avionics is that, despite the costs involved, upgrading avionics systems can often save the manufacturers of civil and military aircraft substantial sums, by avoiding the development outlays of entirely new air-

This does not entirely eliminate the need for new airframe designs - sooner or later the evolution of the threat inevitably requires the development of an entirely new air-frame/avionics package, as is evidenced by the European move towards a new multi-na-tional combat aircraft — the Eurofighter — but it does help to cut the number of such new

But as a result, "mid-life updates" of existing combat aircraft are now a regularly recurring feature of defence budgets that are either being reduced, or are under considerable pressures to provide better value for money. Similarly, in commercial avi-ation it is now common for one

particular aircraft type to be turned into a family of derivatives, to meet the changing requirements of the airlines. While this often involves some changes to airframes, especially by lengthening fuselages to accommodate more

passengers or fuel or both, it is equally frequently achieved by upgrading avionics and other systems to improve perfor-One significant development in this respect is the emer-gence of "Erops" — extended range operations overwater —

whereby twin-engined aircraft such as Boeing 767s, 757s and even 737s, as well as Airbuses, can fly extended distance non-stop over oceans that were originally regarded as the exclusive preserves of three and four engined airliners, largely because of improve ments to navigation, engine control and other avionics

Also, in commercial aviation, the introduction of computer-ised "electronic flight informa-tion systems" (or Effs), coupled with colour cathode ray displays of information on the flight deck, replacing the myriad dials that once were a common sight, is not only easing pilots' workloads but also resulting in reductions in flight

deck personnel, yielding significant long-term cost-savings to

The two-pilot crew is now common, whereas previously there was also a flight engithere was also a light engineer, much of whose role has been superseded by on-board computers and, in the latest developments, by fly-by-wire

In the latter, the conventional mechanical systems of controlling an aircraft's alle-rons and elevators have been replaced by electronic systems governed by a master com-

In the Airbus A-320, this has been accompanied by the aboli-tion of the conventional control columns on the flight deck, and their replacement by "side-stick controllers" — small knobs set to one side, which give the pilot much more work-room and therefore physical comfort.

The fly-by-wire system origi-nated in military sircraft, and especially in the British Experimental Aircraft Programme (EAP) which is the forerunner of the multi-national European Fighter Aircraft (EFA).

So far, fly-by-wire in com-mercial aircraft is limited to the A-320, and other manufacturers are waiting to see how it performs over a period of time before committing themselves

Doubts about fly-by-wire sur-faced earlier this summer when an A-320 crashed while on a low-level demonstration flight at Habsheim Airport near Mulhouse, France, but at time of writing and subject to the final accident report, the crash appears to be attributable to causes other than any faults with the aircraft's electronic syste

Looking ahead, further developments of this system include what is called "fibre optics", or "fly-by-light", in which the electronic signals are replaced by light impulses. The latter is also currently

confined entirely to military aircraft, but it seems likely that eventually it will spread into commercial aviation, though it may take some time

Just how far this type of avionics revolution will go in the field of commercial aviation is debatable. The recent issue of Jane's Avionics commented that the time might well come when "an avionics system could be developed which would fly an airliner automatically and safely on a planned route."

However, it added that it would be "a very brave person who boards the first unmanned transatlantic Boeing 797 or Airbus 370!"

> Michael Donne Lynton McLain.

#### MANUFACTURING TECHNOLOGY

#### Better fastening methods

new aerospace materials in the next decade or two will be matched by changes no less revolutionary in manufacturing methods.

The new materials will be

fashioned and joined by quite different methods, and will often be made as single sub-assemblies instead of being assembled from discrete parts. Some of the most striking examples of change are to be expected right in the core of the gas turbine. As recently as 1960 steel accounted for about 60 per cent of the weight of an

aero-engine. With the introduc

tion of more nickel alloy and titanium alloy, steel content

has fallen to less than 20 per

cent today. But the complexity and cost of manufacture of such compo-nents as turbine blades has nents as turbine blades has risen steadily, not least because of the labyrinth of air cooling channels bored through these parts to allow them to survive modern engine

Ceramics could lead to a big simplification in manufacture simplification in manufacture as well as in engine design, by tolerating high temperatures without forced cooling, as well as permitting a marked improvement in engine efficiency because the air now being bypassed for cooling can be used to create thrust.

Dr Bob Jeal, Rolls-Royce's chief of materials and mechanical technology, says engineers in future "will not choose a temperature and stress levels of a particular component. They will decide the temperature and stress levels needed by a component for a new engine and will then design a material to meet the require-

Fibre-reinforced components, foreseen for both engines and airframes of the future, can be designed for minimum weight by providing increased strength in the direction in which it is required. Although fibre-reinforced thermoplastics have not yet penetrated to the core of the engine, because of a top temperature limit on them of only 180 deg. C., Dr Jeal believes their introduction is only a matter of time.



Boeing-Vertol technicians building the graphite/epoxy side trames, which combine strength with lightness, for the V-22

As for the high-strength ceramic materials emerging for the future military engine, two the futtire military engine, two approaches have emerged in the past decade. One is learning to live with the brittleness, and developing an understanding of the failure micro-mechanics of ceramics; that is, flaws and their relation to strength. With this approach statistical methods and non-destructive or proof-test techstructive or proof-test tech-niques could be used to specify design requirements such as strength or component life, Dr

The other is identifying the source of strength-limiting defects and developing manufacturing processes to eliminate them. This is not so easy, he says. The critical defect size for coramics is only should not appear to the coramics is only should not be a source. for ceramics is only about onesize for a metal at typical operating stresses.
Rolls-Royce has bench-tested

Osprey tilt-rotor aircraft, which shortly makes its maiden flight such as mirrors for aerospace are beginning to attract the devoted attention from manufacture hitherto the preserve of aerospace alloys and composites. New, automated methods for shaping high-quality optical components much faster, needing less skilled people, are being demonstrated in a laboratory in Albuquerque, New Mexico.

ceramic blades, turbine shroud rings and air bearings in an experimental helicopter engine, but has not yet flown ceramic components in an engine core, its executives say.

autoclave. This has been demonstrated by British Aerospace for the wing of the European Experimental programme (EAP). It can produce a saving in weight of nearly one-third, the company claims.

Other savings already achieved by the company's novel manufacturing and assembly methods with carbon fibre include 24 kilograms compared with metal for the Tornado taileron (16.4 per cent), 82.2 kg for the Jaguar torsion box (12.8 per cent), 81 kg for the Jaguar wing (9.1 per cent), and 7.8 kg for Jaguar panels (20.6 per cent) (29.6 per cent). Mr Ivan Yates, BAe's deputy

chief executive (engineering), in his Wilbur and Orville wright Memorial Lecture, said that in support of the EAP his company was exploiting the opportunities presented by the long production run for the Tornado. They included changes in work practices and wage structures, and removal of artifical barriers between design, development and man-ufacture. BAe also modernised its machinery. In particular, numercially controlled machines were linked to a central mainframe computer, itself CAD/CAM systems. The aim was to reduce costs at all stages in the design, develop-ment and production process. Precision optical components such as mirrors for aerospace

According to Aviation Week, the development optics facility operated by Martin Marietta for the US Air Force Weapons Laboratory at Kirtland Air



Bosing 757s being built at Seattle. Production of this medium-range twin-engine alrerall is to be models, as the company tries to reduce its backlog and speed delivery to the strlines

# Many things can happen to a promise.

A promise can be broken.

It can be ignored.

Or simply forgotten.

A promise can be put on the back burner.

It can be attributed to someone else.

Or just lost in the shuffle.

A promise can become procrastination.

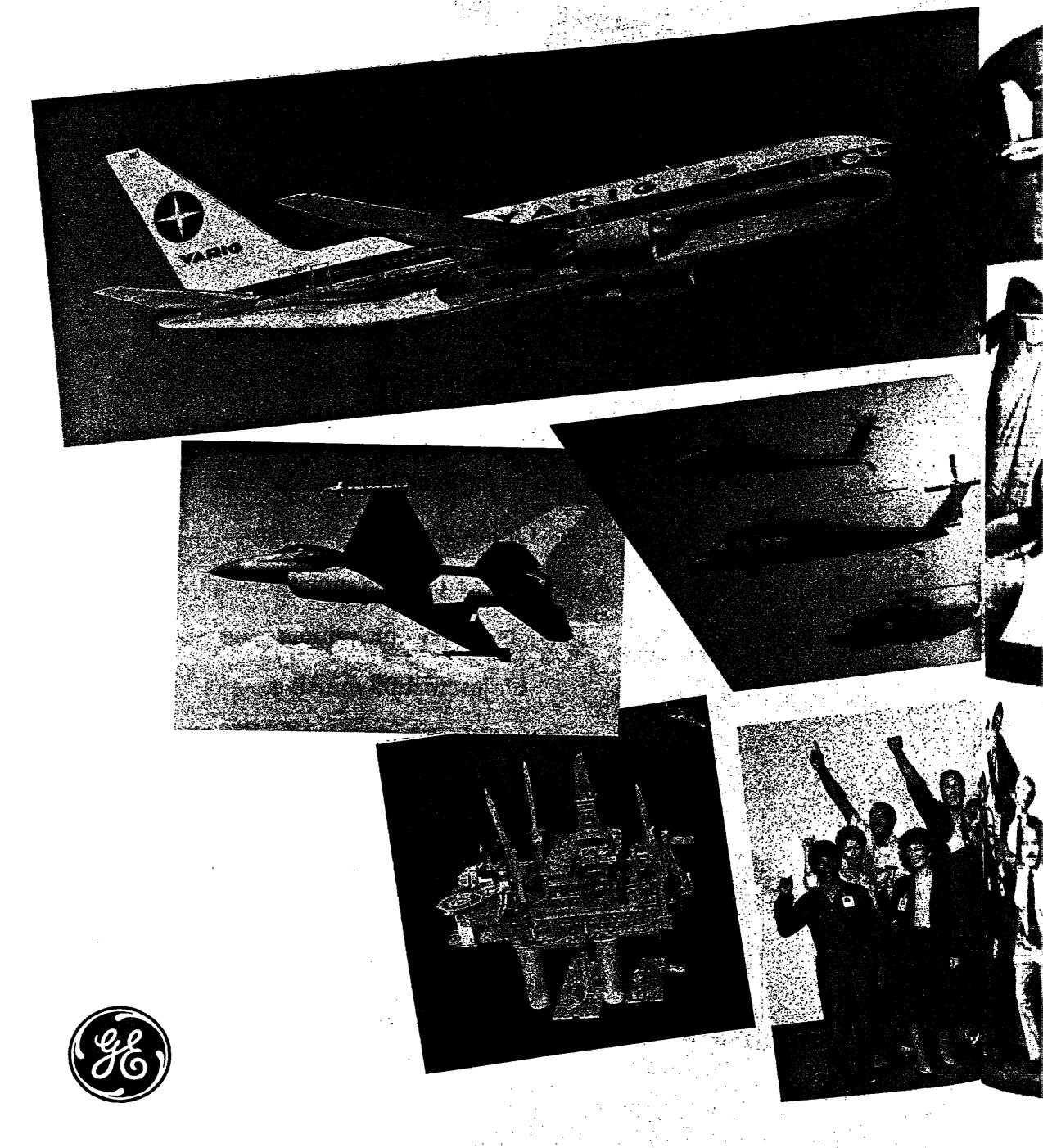
It can become puffery.

Or just wishful thinking.

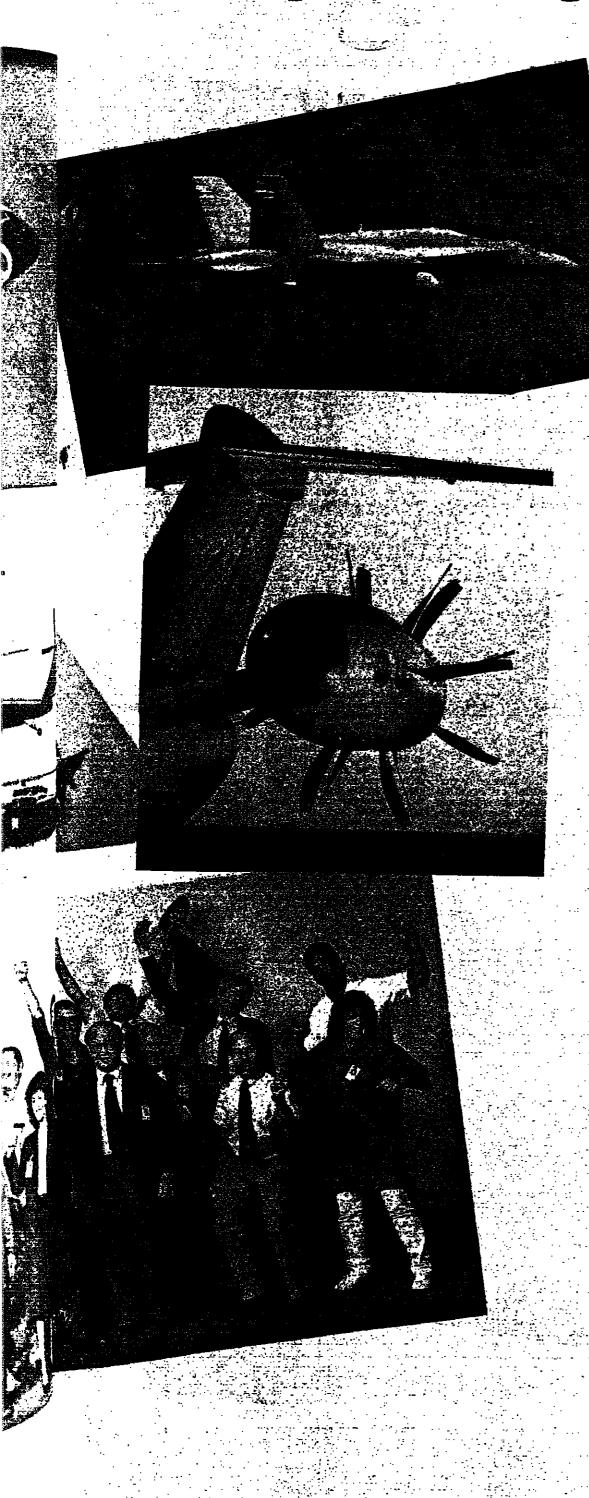
Of course, there is one more thing that can happen to a promise.

A promise can be kept.

# Keeping the



# d Promise.



1.

We kept our promise of reliability for our commercial customers with the CF6-80C2—the only new generation engine in its class with FAA approval for 120 minutes of Extended Range Operation over water for the new widebody twins.

2

We kept our promise to fighter pilots with engines that make good fighters great fighters. Both our F110 and F404 have added new responsiveness and durability to the service performance of the world's most sophisticated fighter aircraft.

3.

We kept our promise to make the most reliable helicopter engine.

Right now, the T700 is setting new standards all over the world.

Derivatives of this proven engine are now in production. They deliver 30% more power, with room to grow as our customers need it.

4.

We kept our promise to our marine and industrial customers with the LM2500 gas turbine—an engine so durable, some units have been in service for over ten years without an engine-related shutdown.

5

We kept our promise to revolutionize subsonic flight with the next generation of fuel efficient engines, the GE36—an unducted fan engine that cuts fuel consumption by up to 40%.

6

We're keeping the promise of unsurpassed product quality and service support with a worldwide network of dedicated GE people who have never forgotten that the customer is number one.

**GE Aircraft Engines** Keeping the Promise

FOR THE first time in a decade Aerospace stocks, in fact, have been among the biggest casualties of the post-crash retrenchment on Wall Street. the Pentagon will be buying fewer military aircraft this year than it did a year earlier. This stark fact symbolises prospects for the US aerospace industry which might now be Their price-earnings ratios stand today 30 per cent below bleaker than at any time since the market average and at

the immediate post-Vietnam era, were it not for three pow-They are: the world's insatiable appetite for commercial airliners; the rapid technological progress, especially in electronics, which is creating huge demand for upgrading and retrofitting of existing military aircraft; and - rather dimmer on the horizon – the possibil-

ity of a genuine bonanza in commercial and military exploitation of outer space. These three developments, along with the enormous back-log of orders and research projects still outstanding from the Reagan era, should ensure that aerospace remains one of the more dynamic industries in the US economy, whatever hap-pens in Washington in Novem-ber and over the next year or

Nevertheless, the balance of the industry between military and civilian applications is shifting in a decisive way. The military contractors are

very much on the defensive. and given that military sal accounted for 75 per cent of the aerospace industry's \$125bn of output in 1988, it is not surprising that the companies in this sector, along with their shareholders, are not in the best of

THE SOVIET aerospace industry is the second largest in the world, after the US, and indeed there are some who rlaim that it even exceeds the US in size

Some indication of the Soviet industry's size was given earlier this year in the latest issue of the US Government analysis, Soviet Military Power. This suggests that average

annual production of Soviet fighter/attack aircraft, for both its own forces and those of Warsaw Pact countries, amounted to close to 1,000 aircraft a year between 1983 and 1987, compared with about 800 by the US. Output of military helicopters amounted to about 750 aircraft against just under 500 for the US.

The same analysis indicates that in the decade from 1978 to 1987, total Soviet procurement of fighter/attack aircraft amounted to 7,700, against 3.600 for the US: with some 390 long-range bombers, against 81 for the US, and some 4,400 military helicopters, against 2,100

UNCERTAINTY continues to tion in the military sphere is

These figures indicate a mas-

Although the recent suc-

cesses of the European Airbus

consortium in winning major

new orders, especially in North America, for its jet airliners

has given a major boost to the civil side of the business, the

military sector continues to

suffer from the slump in mili-

aerospace business have

prompted both the French authorities and the country's

main aerospace manufacturers to intensify their calls for

greater European and transat-

The collapse of France's tra-ditional military export mar-kets of the Middle East, the

financial problems of develop-

ing countries and the decline

in the value of the US dollar

last year have had a particu-larly heavy impact on the

Avions Marcel Dassault-Bre-

guet group. France's famous

Dassault, whose concentra-

fighter aircraft company.

lantic cooperation.

The difficulties of the world

tary aircraft export sales.

before President Reagan arrived at the White House. The talk in the Pentagon, as well as on Wall Street, is about the inevitability of consolida-tion in the defence industry, with several well-known air frame manufacturers and many of the small sub-contrac-tors expected to disappear through mergers in the next

The most immediate threats to the industry need almost no recapitulation – the presiden-tial election; the defence con-tracting scandal, which has given rise to further tightening of procurement terms: the general fiscal stringency in Washington; and, more specula-tively, the possibility of

genuine progress on disarma-ment and detente. From the defence industry's point of view, there is also a more positive way of looking at the same problems. Over the last eight years the US government has ordered all the weapons the country could reasonably expect to need in the

However, the current data will be very much of a soft landing for the industry, nothing like the collapse of the mid-1970s, when weapons pro-

sive and vigorous industry in military terms alone. When to output, which provides not only for Soviet requirements but also for those of its allies (most of whom either do not have aerospace industries, or at best small ones, of their own), it is clear that the Soviet industry is dynamic and versatile, operating across just as

trate on advanced models. .

more costly, more difficult to develop, and will take longer to produce than the older models. their superior quality will enable the Soviet Air Force and Air Defence Forces to meet their requirements more effectively, even though in some instances they may replace existing aircraft on less than a

Some major new Soviet miliprogrammes have

decline in the military aircraft

export market, has been forced

during the past 18 months to

lay off workers and close

nlants for the first time in its

Dassault is now trying to find partners to collaborate in

its programme to develop the

Rafale, France's new-genera-tion fighter aircraft due to come into service in the mid-

The French government this

year finally gave the Rafale

programme the official go-ahead by ordering the first two prototypes of the new air-

distinguished history.

The balance of the US aerospace industry is shifting

#### Civil orders set to rise

curement was declining at a rate of 7 per cent a year at the same time as airliner sales

That was the period when aerospace manufacturers -most memorably Lockheed came to the verge of financial

Boeing McDonnell Douglas Rockwell int Lockheed

Gen Dynamics

Research: Rivida Nachoma

sent outlook.

While Pentagon spending has fallen, the backlog of orders is still rising. Backlogs in 1988 are expected to reach a record \$145bn, 5 per cent up on 1987. In fact this year's decline in sales has been solely due to

the exhaustion of two pro-

grammes - Rockwell's B-1B Bomber and Lockheed's C-5B.

Northrop

Even within the military aircraft sector there are several redeeming features about the

13.146

12,123 11,321 9,344

Each of these programmes was worth \$2bn annually for their contractors. B-1B deliveries have now been completed and the C-5B comes to an end

next year.

The biggest current programme which now remains in question is Grumman's A-16 Navy attack aircraft. The Navy has cancelled a highly-advanced version, the A-16F,

because of its cost, and Grum-

man's efforts to revive the pro-

gramme with a less ambitious

A-16G may not succeed in yielding the hoped-for billions

big aerospace programmes

seem fairly secure. This

includes the General Dynamics

F-16 and McDonnell Douglas

F-18 fighters, the Tactical Mis-

However, most of the other

of dollars in orders.

1986 sales

12,661

sile Programmes and the MX sales of the US aerospace industry and are expected to least three enormous new weapons initiatives - the B-2 Stealth Bomber, expected to cost \$65bn, the Navy's \$65bn

Advanced Tactical Aircraft and the Air Force's \$75bn Advanced Tactical Fighter. If all three of these proes survive the political

US Aerospace company earnings – 1987

axe, and most observers in-

Washington expect them to do

so regardless of the election

results, military aircraft orders and production could well be

on the rise again from 1991

growth remains in prospect for the avionics and military com-puter businesses, which now

account for \$61bn of the \$125bn

In the meantime, rapid

% change on 1987 earnings 1986 earnings % change on

635 421

437 94 36

onwards.

**SOVIET UNION** 

Beyond this, there are at rise to well over half the total

Space revenues, which currently amount to \$25bn, are also said to rise by 8 to 10 per cent annually even if the Star Wars programme is severely curtailed or cancelled, as the Space Shuttle programme resumes, and the demand for

1967 total

commercial space applications

The biggest rewards for the

aerospace, however, are likely to be found in the civilian sec-

tor. US civilian aircraft sales this year should come to

\$17.5bn, about 60 per cent of

which will be generated by

in 1987 and about \$13bn a few

This compares with \$16.5bn

-28 +13

exports.

years earlier. By next year sales could rise to \$20.5bn and should continue to increase by \$1bn. to \$2bn a year until the mid-1990s, according to Mr Paul Nisbet of Prudential Bache.

Mr Nisbet and numerous other analysts believe that this year's \$39bn in worldwide orders for new aircraft is ly to represent the top of a cycle.

The most fundamental reason for optimism lies not just in the rapid growth of passenger traffic, a factor which could easily be reversed by a recession. Rather, it is expressed in the simple and

striking statistic that 85 per

"This means that we have

not. yet seen an airliner

replacement cycle over the 33 years of the jet age," Mr Nisbet

Barring a worldwide eco-

nomic collapse, that replacement cycle now seems to be

built are still flying today.

11.6 17.6

Says.

1986 funded Backlog Sbn

under way, promoted in part by the enactment of more stringent noise requirements in many countries.

in many countries.

The biggest gainer from the strength of civilian aviation is bound to be Boeing, which still produces the only complete range of jet airliners in the world, and looks set to maintain or increase its 55 to 60 percent share of the world market.

Less predictably. McDunnell Less predictably, McDunnell Douglas is also enjoying a considerable resurgence, parity as a result of the falling dollar and partly because of the interest aroused by its proposed fuel-efficient MD-91 and MD-92 models. These look like being the only commercial aircraft to exploit the revolutionary new

prop-fan technology. The higgest question hang-ing over the US commercial aviation business is whether McDonnell Douglas will even-tually join forces with Airbus to strengthen their competitive position against Boeing. Such a collaboration would

face Boeing with a serious long-term challenge for the first time in 20 years and, in theory, unleash a new round of fierce price-cutting. Whether or not this happens.

with all three manufacturers' capacity now almost fully booked until 1991, the empha-sis of management is likely to shift to raising profit margins rather than undercutting their

**Anatole Kaletsky** 

this is added civilian transport

wide a spectrum as that of the Military Power, which stresses that "the Soviets are making

"While their new sircraft are

one-for-one basis.

This is confirmed by Soviet strenuous efforts to increase aircraft quality and to concen-

Massive and vigorous

emerged. These include two bomber programmes. One is the Bear H cruise-missile carrier, which is accounting for the greatest percentage of bomber production in this decade, with more than 70 built so far.

The other is the more versatile and capable Tupolev Blackjack supersonic bomber, whose operational deployment is Among major new fighter

aircraft are the MiG-29 Ful-

crum supersonic fighter and

the Sukhoi supersonic Su-27 Flanker, which entered series production in the mid-1980s. in the near-term, says the US analysis, the Soviets "will likely focus on producing fighter aircraft for strategic defence and tactical operations. It is also probable that additional plants will

In helicopters, an industry in which some of the products have achieved unique "firsts" for the Soviet Union, such as in heavy weight-lifting transport aircraft, production has declined only slightly as some older military types have run

"As with other systems, the emphasis in the 1980s has been on producing fewer, more technologically advanced, more capable models, and on improving and expanding the roles of the existing line of Soviet helicopters." In the commercial arena, the

Soviet industry tends to lag behind the West in some technologies - in engine development for example - and to follow the West in producing new airliner designs. But it often

makes up in quantity of production, to meet its massive home market and to supply East European and a few other countries.

In terms of commercial aircraft exports, however, the Soviet industry is no match for the West, and despite attempts to woo the airlines of some of the under-developed countries, most non-Soviet Bloc airlines still opt for the products of the "Rig Five" Western jet builders – Airbus, Boeing, McDonnell Douglas, British Aerospace and

A significant development in recent months has been the way in which airlines in Eastern Europe have been turning increasingly to Western jet airliner designs, with some significant sales successes already achieved by Airbus in East

In the sphere of advanced technology, the US analysis stresses that the Soviet military industry is undergoing a revolution.

"Soviet researchers are supported by large aerodynamic test facilities that are well equipped and very sophisti-cated. Large investments in aerodynamic research, combined with one of the world's largest wind tunnels, have enabled the Soviets to develop aerospace systems that are increasingly competitive with Western counterparts.

"As a result, new Soviet mili-

tary aircraft are significantly more capable and incorporate much more sophisticated elec-tronic sub-systems and armaments than their predeces-

Historically, the Soviets have looked to adapt or exploit

Western technologies for their own purposes. "While the Soviets: are not exclusively depen-dent on Western technology to upgrade their military systems, they are deriving major bene-fits from applications of West-

ern technology.

Although the Soviets have, in the past, relied more on quantitative production to achieve military superiority, they are now emphasising the acquisition of advanced technology to produce and deploy high-quality weapon systems and narrow the West's lead." Much of the Soviet improve-ment in technology acquired from the West has been through entirely legal means, but "the Soviets are gathering significant amounts of information through surreptitious means the US analysis says.

"By illegally acquiring technology, the Soviets are able to forgo the substantial investment costs in basic and applied research and development. They are also able to keep pace with those technologies that might alter the character of conflict and thereby represent a greater threat to them." In the transport aircraft field, some major new designs have emerged or are on their way. Ilyushin, primarily a transport aircraft builder but also responsible for anti-submarine warfare and long range

maritime reconnaissance aircraft, is currently developing the II-96-300, a four-engined so ll. 95-300, a four-eigened 500-passenger airliner designed for ranges of up to about 4,600 miles, which makes it broadly comparable to the twin-en-gined European Airbus A-330. Ilyushin is also now designing a new small twin turbo-prop transport, the II-114, for up to 60 passengers for short-range routes.

Tupolev, also a major trans

port aircraft builder, whose most famous past designs have included the Tu-144 "Concordski" supersonic airliner, is now developing the Tu-204, a medium-range transport to replace the now ageing Tu-154, with capacity for up to about 214 passengers. The first flight has passengers. The first man been scheduled for this year.

Michael Donne

Pressures on France's aerospace industry have intensified

#### In search of collaborators

collaborative project between the UK, West Germany and

Indeed, the European aerospace industry has blamed Dassault's traditional do-italone policies for the failure of reaching a broad agreement between major European countries to develop a single new fighter aircraft instead of launching two competing pro-

But in recent months, under the new leadership of Mr Serge But the Government would now like to extend collabora-tion on the Rafale to other Dassault, the son of Mr Marcel Dassault, the late founder of the company, the group has European countries and has also suggested possible collaboadopted a far more pragmatic approach to collaboration than in the past. ration with the US. But efforts to find partners for the Rafale have been extremely arduous, especially since the French aircraft is

Aerospatiale, the French state-controlled aerospace group, has succeeded in riding the tide thanks to its diversi-

fied aerospace activities, even though it too has suffered from the decline of the US currency and the stagnant military mar-

But while its defence operations - mainly helicop-ters and missiles - have not escaped the general slump in military exports, prospects for the civil aviation and space sectors have become increas-

ingly encouraging.
The success of the European
Ariane space rocket, new satellite programmes and future space collaboration projects has now opened a significant new industrial phase for France's space industry.

As for the civil aircraft side,

the marketing successes of the new Airbus A-320 and launch of the A-330-A-340 programme have raised spirits at Aerospa-

tiale's civil aircraft division. Airbus recently indicated that between now and the year 2006 it expects to deliver more than 3,000 airliners out of a total civil aircraft market for about 9,200. This would represent an overall market share of well over 30 per cent, worth about \$179bn, the European

But Mr Henri Martre, Aerospatiale's chairman, has continued to argue for greater collab-oration in the civil sector as well as in the military aircraft business. Mr Martre also favours collaboration between Airbus and McDonnell Douglas of the US.

consortium says.

This collaboration is crucial, he says, if Airbus and McDonnell want to fight Boeing's ambitions to monopolise the civil aircraft market. ious to develop collaboration on new-generation supersonic and hypersonic passenger aircraft. The French group believes there will be strong demand for such sircraft. Aerospatiale has already

launched studies on a super-sonic new aircraft called ATSF (Avion de Transport Supersoni-que Futur) and on a hyper-sonic aircraft called AGV (Avion a Grande Vitesse). The ATSF would fly like Concorde at Mach 2 but would

have a far bigger range of about 5,000 miles and transport double the number of passen-The French group is also

ATSF with the hypersonic AGV, which Aerospatiale officials claim could be ready for

But while the necessary ischmologies for the new sumersonic airline are known and tested, the hypersonic aircraft would call on the development of new in engine and materials technologies since the AGV would have to withstand skin temperatures much higher than Concorde — of the order of 600 deg. C.
Although the French hypersomic project is still only at a preliminary phase, Aerospatiale says a number of key ele-

service by the years 2010-2015.

ments in the definition of such an aircraft are already emerging. Thus the AGV would be a 300 tonne sircraft capable of carrying 150 passengers at Mach 5 over 7,500-mile routes. For the engine, Aerospatiale is working on a combined tur-

bofan-ramiet propulsion sys-tem having already developed a ramiet system for its tactical missiles. missiles.

The proposed engine system for the AGV would involve the use of turbofan for take off and flight up to about Mach 3. At

this speed, the ramjet would

craft up to Mach 5. Aemenatiale officials empha sise that the French hypersonic aircraft would take off from conventional runways and use the same terminals as

ordinary aircraft, meeting all

take over and propel the air-

airport noise and environmen-tal controls.

Passengers travelling in the projected hypersonic aircraft will find the same environment as on existing jet altiliners since the AGV will be designed to fly inside the earth's atmo-

sphere and not in space. Therefore they will not face the effects of weightlessness nor excessively high gravity forces as they travel from Paris to Tokyo in barely three hours. But as with other ambitious and increasingly costly new acrospace programmes, Acrospatiale is now actively promoting broad European and American cooperation to develop this new type of aircraft.

Paul Betts

WEST GERMANY'S aerospace industry has weathered a bumpy ride during the past year, overshadowed by many months of complex wrangling over restructuring the sector under the leadership of Daimler Benz, the motor and engineering conglomerate.

However, a string of announcements by European governments backing collaborative ventures for the 1990s in military and civil aerospace has considerably improved the

prospects. The collaborative projects on which Messerschmitt-Boelkow-Blohm (MBB) the leading West German aerospace and arma-ments group now depends for most of its business are generally thought more reliable than purely national projects for the simple reason that they are more difficult to cancel.

On the other hand, interna-

tional cooperation brings with it the difficulties of harmonising different governments' decisionmaking - a problem

seen above all in the plans to restructure the management operations of Airbus Industrie Additionally, the long running negotiations over plans for Daimler-Benz to take a 30

competing against the rival European Fighter Aircraft, the

been testing nerves and patience in the industry. Mr Hanns Arnt Vogels, the MBB chairman, who admits that the long period of uncer-tainty over the company's future management and shareholding structure is affecting staff morale, has called for the Bonn Government to take a speedy decision to allow the

accord by the end of the year.

per cent stake in MBB have

The problem, however, is that the Daimler deal is linked directly to parallel negotiations on MBB's 37.9 per cent stake in the Airbus project through its subsidiary Deutsche Airbus. The Bonn government agreed last June to put up an additional DM 4.9bn to fund development of the new A-330 and A-340 airliners as well as to clean up the Deutsche Airbus

**WEST GERMANY** A saga of wrangling

balance sheet. But Bonn is being asked by Daimler-Benz to take on additional financing obligations as a condition for its agreement to step in with a 30 per cent

MBB stake.
The political and industrial horsetrading also involves the governments of Bavaria, Ham-burg and Bremen which currently own a 52 per cent stake in MBB.

Daimler is highly interested by the MBB weapons and space side, which it regards as highly complementary to its present activities (including 100 per cent ownership of the aero engine maker Motoren- und Turbinen Union, and majority stakes in Dornier and AEG). But it is basically reluctant

to become involved in the Air-bus, in view of the financing risks associated with new air-craft development and the effects of the weak dollar on future sales income.

The European decisions over the collaborative ventures have also been heavily affected by delays - but they are all virtually off the ground. The green light has been given for the Airbus A-330 and A-340, the Franco-German PAH-2 antitank helicopter, the four-nation Eurofighter and the Columbus, Ariane-5 and Hermes space These add up to sizeable

additional orders for MBB and

other leading companies. MBB, whose turnover has been stagnating for several years, boosted sales last year to DM 6.1bn from DM 5.7bn in 1986. It expects turnover of DM 7.1bn to DM 7.2bn this year, with orders in hand moving up towards DM 12bn from DM 10.6bn at end 1987.

The industry was given another fillip in July with announcement of Britain's £10bn armaments deal with Saudi Arabia. Involving the delivery of another 48 Anglo-German-Italian Tornado fight-

er-hombers, the accord will give MBB additional turnover of DM 500m over the next few years and will be sufficient to

keep production lines open until 1994-5.

Dornier, the smaller rival of

MBB which came under the wing of Daimler in 1985, has had a less successful time. The company's minority family shareholders have been Daimler wanted to push embroiled in a row with Mr Edzard Renter, the Daimler

chairman, over the motor com-pany's efforts to take over greater financial and management control. Dornier in June had to announce the halt of develop-ment work on the 30-seat Do 328 commuter aircraft which had been planned to go into service in the 1990s at a total development cost of DM 700m. This followed the failure of the

Daimler board and the Dornier family to reach agreement on a proposed DM 300m capital

through the capital increase to dilute the family's share and increase its 65.5 per cent equity stake. The row has left a good deal of bad blood, and threatened the future of at least

Dornier family representatives have threatened a lawsuit if Daimler goes ahead with the planned 30 per cent stake in MBB, on the grounds that this

A wave of criticism of the proposed Daimler-MBB take-over has also been signalled over has also been signalled from the Opposition Social Democratic Party. This is on the grounds that the proposed conglomerate would distort competition and could have an unbeatthy hold over the state. The deal would create a huge arms and aerospace conglomerate receiving 35 to 40 glomerate receiving 35 to 40 per cent of the Defence Ministry's defence procurement spending, as well as further amounts from the Economics amounts from the Economics
Ministry for the Airbus programme and a large slice of
funds from the Technology
Ministry for space research.

The Federal Cartel Office in
Berlin, which will have to vet
any takeover, has already indicated that it will examine the
case very carefully. The office

nomics Minister, but it is likely that any recommendations it

makes will be taken seriously by the Government.

Significantly, the proposed Daimler MBB link up has been greeted by British Aerospace and Aerospatish, the company's two partners in European ventures on the grounds. pean ventures, on the grounds that it would strengthen MBR's capacity to collaborate by improving its shaky mancial structure.

There is little doubt that an aerospace industry under the general control of Daimler would be better managed and financed than it is at present. But a great deal more atmospheric turbulence has to be expected before this particular flight reaches its destriction.

David Marsh

#### Spending rate still rising

continued from page 1

aerospace industry, as develop-ment and production costs have risen, and UK, Western European, Brazilian, Japanese and other industries have been extensively exploiting it for

many years. The best examples are the European international teams in Panavia and Turbo-Union for the Tornado fighter and in Eurofighter and Eurojet Turbo for the new KFA, as well as Airbus Industrie in the commercial airliner sector.

But up till now it has played

a less dominant role in the US aerospace industry, although

there have been some major ventures, notably in collabora-tion on engines, with General Electric and Specma of France jointly building the CFM-56 engine and Rolls-Royce, and Pratt & Whitney collaborating with others on the V-2500 for the European A-320 Airbus.

But what is now being discussed more readily is much closer collaboration, with direct joint involvement in design and development as well as financial risk-sharing by airframe manufacturers on

would be too expensive for even a major US company to undertake alone.

case very carefully. The office can be overruled by the Eco-

Military budget pressures in the US have had a big part to play in generating this change in attitude. Current ideas for a possible Airbus link with either Lock-head or McDonnell Douglas, in

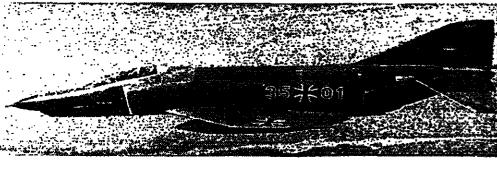
a hid to counter the current dominance of Beeing in world jet markets, is a classic example of the type of closer collaboration now emerging

One idea is for a new long-range aircraft to compete

directly with the Boeing 747, by combining the MD-11 fuse-lage with the Airbus A-330/340 wing. Another is for a stretched version of the A-320, to seat between 180 and 200 passengers, which would rival the Boeing 757.

If such collaboration is achieved, it could provide a

Drecedent for further joint ventures later, such as the projected second-generation super-sonic airliner, which could well bring together the entire industries of such countres as the US, Western Europe and



F4-F Phantoms of the West German strtorce: these aircraft are equipped with AMRAAM

**Exports boost continued expansion** 

continues to expand, and turn-over during 1988 is expected significantly to exceed £10bs. of which well over £5bn will be

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Michael Dom

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as exports.
Figures compiled by the Society of British Aerospace Companies, based on Customs and Excise returns, show that the industry samed a belance of payments surplus last year of \$2.4bm, with exports amounting to a record £5.6bn, 12 per cent more than in 1986.

over terms, ranks second in the Western World to that of the US, but while the US exports only 20 per cent of its aerospace output, the UK exports 60 per cent.

Commenting on these statis. tics, the SBAC says that the industry is becoming increasingly competitive. Although the labour force has decided from 230,000 to 200,000 in recent years, "this has been accompanied by a significant increase in turnover in-real terms which means a really substantial increase in produc-

The SBAC adds that productivity in the aerospace industry has doubled over the last ten years, as companies have trimmed labour forces and invested heavily in new mannfacturing techniques so as to remain at least up with, if not ahead of, the competition, pri-marily from the US.

this century, the UK industry is expected to benefit substantially from the far-reaching ng to a record £5.6bn, 12 per Mamorandum of Understand, aged in the memorand ent more than in 1986. ing signed earlier this summer yet to be negotiated.

The UK industry, in turn, with Sandi Arabia. But many companies

The memorandum provides for the supply of substantial quantities of military aircraft and associated infrastructure equipment, including new air bases, which together with other items such as warships, could amount to more than £10bn of business in the next

few years.

The deal stems from the Saudi desire to build up its own armed forces as a result of recent military tensions in the Middle East and especially in the Gulf area.

The UK, and especially British Aerospace, has a long history of supplying military aircraft and associated infrastructures to Saudi Arabia, and it is clear that the latter's satisfaction with past performance has been a major factor in the new arrange-

So far, it is stressed, only an over the remaining years of ing has been signed, and the

detailed individual contracts for the Saudi requirements across the spectrum of envis-aged in the memorandum have-

But many companies in the UK aerospace industry will benefit, especially British Aerospace which is the lead contractor under the memorandum, through which other contracts will be channelled. Although no details have yet

been revealed - indeed, detailed contracts have yet to be negotiated - in the long term BAe is expected to win new orders for at least another 48 Panavia Tornado fighters, about 60 Hawk 200 light com-bat aircraft and trainers, together with some military variants of the Type 146 fourengined transport and the Type 125 light business and liaison jet.

tantial business is also likely to be gained gained by Westland on helicopters (over 80 are envisaged, including possibly some EH-101 multi-role helicopters, Lynx multi-role aircraft and WS-70 Black Hawk helicopters).

Rolls-Royce, together with

Turbomeca, will benefit from additional Adour engines in the Hawk-200, and with its partners in Turbo-Union from the RB-199 engines for the Tornado. Rolls-Royce and Turbo-meca could also benefit from the provision of the RTM-822 engine for the WS-70 helicop-

Many of these contracts may take months to settle in detail but overall the prevailing view is that the UK has now taken over from the US as the major military supplier to Saudi

Arabia.

Mesnwhile, some major restructuring of the UK industry has been under way, and some more may yet occur. Both Rolls-Royce and British Aerospace are now privatised, and considerable internal reorganisation has been under way in both companies, to streamline management, reduce costs and increase their competitive power in world markets.

Within British Aerospace, which has now acquired the Rover motor-vehicle manufac-turing group, the structure of the business is being reorgan-

Dynamics, Civil Aircraft and Space & Communications, together with BAe Enterprises - to enable them to operate virtually as separate profit-

earning businesses.
This devolution is expected to be complete by January next year and is designed to enable the divisions to respond more swiftly to market develop-

A further major development has been the UK Government's decision to privatise Short Brothers, the aerospace manufacturer based in Belfast.
This will be done by inviting

This will be done by inviting offers from potential buyers for the company as a whole. It is now recognised that to try to break up Shorts and sell off its constituent parts, such as aircraft building, missiles and "aerostructures" (making parts for other manufacturers' aircraft), would be a disastrous policy which could destroy the company since the divisions company since the divisions are so closely linked.

No timetable for privatisation has been set, but it seems

likely to be in late 1989 or early

Short Brothers has been Government-owned since 1943 and, as outlined elsewhere in this survey, has been seeking international partnerships for possible new ventures in the regional aircraft market, including the FJX regional jet airliner.

One significant feature of the UK industry's recent overall export performance has been the big contribution by the equipment companies, of which there are more than 300 in the UK, making the British aerospace equipment industry the largest and most capable in the Western world outside the

The equipment industry

includes many big companies that are major international operators in their own right, often with a range of other products outside the zerospace industry, such as Dowty, Dunlinustry, such as lowey, Dim-lop, Fairey Group, Ferranti, Fiight Refuelling, GEC group (including Marconi), Lucas Industries, Plessey, Smiths Industries and Thorn-EMI The export turnover of the

UK equipment industry in 1986

(the latest year for which full

attributable to the equipment and systems (other than engines), that it carries.

These range from avionics systems such as navigation

figures are available) amounted to £2.8bn, which was

equal to that of the equipment

industries of France (£1.5bn)

and West Germany (£800m)

combined.
A substantial proportion of

all UK aerospace research and development outlays are spent in the equipment industry, and there is no item from aircraft

on-board systems to ground-support equipment that cannot

now be obtained from a UK

The world aerospace equip-

ment market is massive. At

least 25 to 30 per cent of the cost of any aircraft is directly

equipment, flight intruments and on-board computers, through to tyres, wheels, brakes, hydraulics, control systems, air conditioning equipment, seating, galleys, toilets and interior decor in commercial sucreft, but excluding weapons systems (such as missiles) in military aircraft.

On that basis alone, out of

the anticipated spending of over \$1,800bn (over £1,000bn) on new aircraft, engines, missiles and spacecraft and other aviation related activities between now and the end of this century, anything up to \$600bn is likely to be spent in the equipment industries

But the competition is fierce and is intensifying, and the development costs of new items of aircraft equipment can be high. This has led increas-ingly to "teaming" between equipment manufacturers on an international basis, just as it has with airframe and engine manufacturers, to bid for major contracts on the new generations of civil and mili-tary aircraft now under development, especially the Eurofighter and the new Airbus

A330 and A340.
But it is also significant that many of the UK companies have over recent years become more international in their outlook, and many have been successful in winning contracts in that most competitive of markets, the US itself, often independently, but also sometimes involving direct links with major US companies.

At the same time, many of the UK companies have directly extended their links with the US by buying companies there, a trend which seems likely to increase in the future.

Michael Donne



BAe 125 executive jet, used here as an air ambulance

Building strengths in collaboration IN A COUNTRY which looks to industrial collaboration as both its piece de resistance the 11-metre rudder for the 767 which a vehicle for growth and the

it claims is the largest single part manufactured in carbon fibre. acquisition of new technology, no company has been more But the longer relationship active in building international is with McDonnell Douglas. This began in 1965 and has links than Aeritalia, Italy's main aerospace company largely consisted of the supply of fuselage panels for the DC-9/ MD-80 aircraft, the DC-10/KC-10 which is part of the Irl state With manufacturing and development partners ranging from Brazil to Spain, from the

US to France, the company has steadily developed from a medium technology assembler of aircraft to an increasingly specialised designer and operator in advanced materials, Unusually for a European company, Aeritalia has ties with both of the US major air-

frame manufacturers, Bosing and McDonnell Douglas. With the former, it is now producing parts for the Boeing 767 airframe, including wing flaps, vertical tail panels and the radoma. But it regards as new generation engines and avionics.

and, most recently, the new

MD-11 programme.

Each programme has seen a steady deepening of the Italian company's participation so that with the MD-11 it is a "programme participant" responsible for more than 12 per cent of the airframe pro-duction - the highest proportion ever contracted out by a US manufacturer to a foreign partner.

While retaining the basic structure of the DC-10, the MD-11 will incorporate the most advanced technologies and materials, together with

Aeritalia's agreement with the American company gives it full responsibility, and a share of the financial risk in the development and production of fuselage panels, winglets and vertical tail fin. In addition, Italy is providing key parts for the cargo section of the com-hined passenger/cargo version. The work alongside McDon-nell Douglas by no means fin-

ishes here. The two companies are now closely involved in the Technology Readiness Pro-gramme which aims to exploit the full benefits of the new prop-fan engine technology.

In a revenue-sharing agreement, they are working to adapt the MD-80 to prop-fan propulsion in the form of the so-called MD-81 - because 1991

so-called MD-91 - because 1991 is the year in which it is hoped to introduce it into scheduled service, depending on the airlines' willingness to buy.

The agreement gives Aeritalia the right to participate in all phases of the research and planning of the new aircraft.

The General Electric engines of the flight demonstration version of the MD-91 have been installed using the pylons man-ufactured at Aeritalia's Pomigliano d'Arco plant near Naples. Such work is becoming an

increasingly important factor in the group's steadily strengthening financial for-tunes, which have moved from a slender L4bn profit on sales of L880bn in 1983 to a profit of L51bn (about £1.7m and up 40 per cent on the year before) on sales of L1,793bn last year.

Many of its commercial hopes are now firmly pinned on the ATR-42/72 joint programme with France's Aerospatiale whose fortunes do not seem to have been adversely affected by the tragic crash of an ATR-42 in the Italian Alps

This version has now with Embraer of Brazil. attracted firm orders for 140 Concern to be in the units since its launch in 1986, together with 72 options. At present, 93 ATR-42 aircraft are being flown by 36 different airlines and interest is now begin-ning to stir in the stretched 72-seater version which has so far attracted 17 firm orders and 33 options.

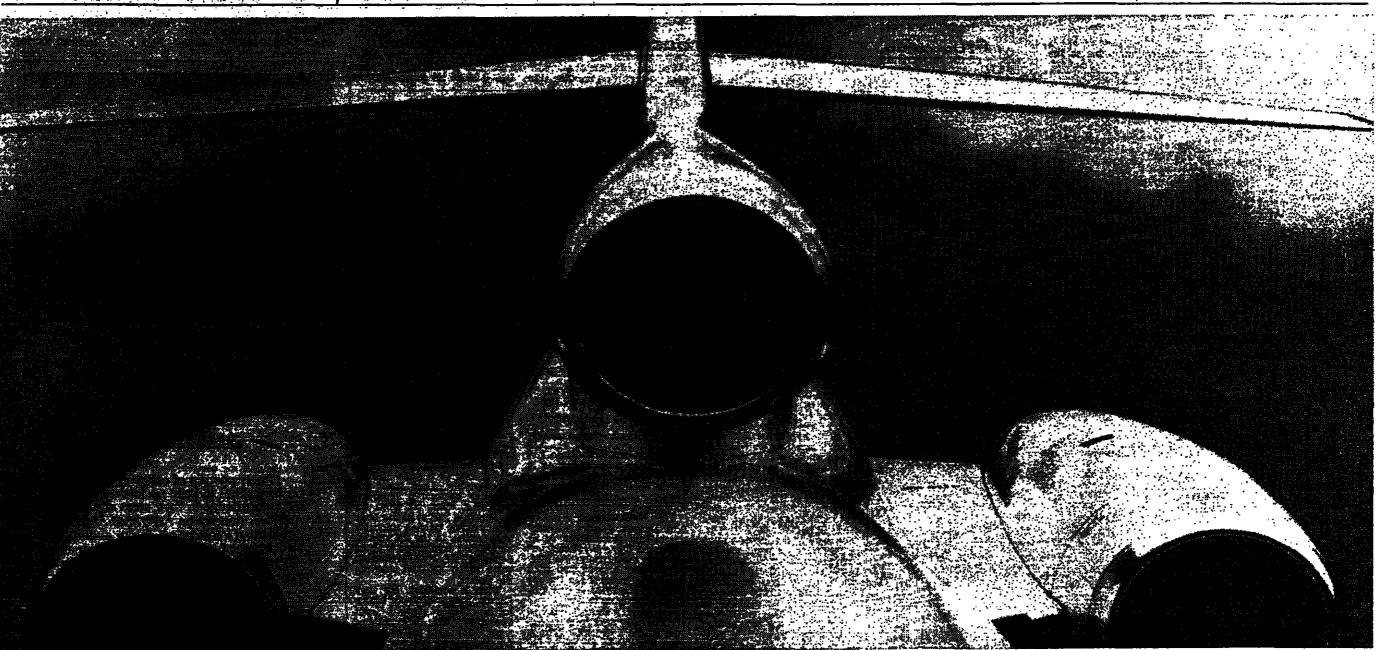
Development of Aeritalia's civil aviation programmes sits alongside a maturing involve-ment in military work – again on a solidly international basis.

Following the Tornado programme, in which Aeritalia's share is 12.4 per cent through the development and manufacture of the aircraft's variable geometry wings, the Italian company is now working on the European Fighter Aircraft project. Here its share of work amounts to 21 per cent.
Other collaborative projects also include the AMX fighter

Concern to be in the forefront of new technologies has also taken the company into space projects through the European Space Agency. At the same time, Aeritalia is working on important contributions to the telecommunications satellites, Olympus and Eutelstat.

With headquarters in Naples and 16,000 employees in 13 establishments around Italy. the company is organised around seven operating units: combat aircraft, transport aircraft, avionics and equipment, space, general aviation assistance, guidance systems and

missiles and engines. Its reach has been further strengthened by taking a 31 per cent stake in Rinaldo Piaggio which is in the final stages of developing a small jet for business use.



# The three-engine Falcon 50 and 900. Executive jets as safe as airliners.

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zones, just

keep in mind the importance of the on-board electronics of a long-range aircraft.

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Business takes off with Falcon.

#### Fokker's fortunes recover

FOKKER, the Dutch aircraft maker, is pulling out of one of the worst tailspins in its turbu-lent history but still faces

heavy headwinds Last autumn Fokker was res cued financially by the Dutch government as runaway production costs for its two new aircraft left the company strug-gling. Fresh orders for the Fokker 50 and Fokker 100 were drying up amid threatening uncertainty over financial via-bility and managerial direc-

But since then Fokker's fortunes have soared. New orders are piling into the company's Schiphol headquarters – three times as many in the first half of this year as all of 1987. The order book is full until 1990 and the production tempo is being stepped up. Stockholders snapped up a

share issue so eagerly last spring that the Dutch government was left with only 16 per cent of the company instead of

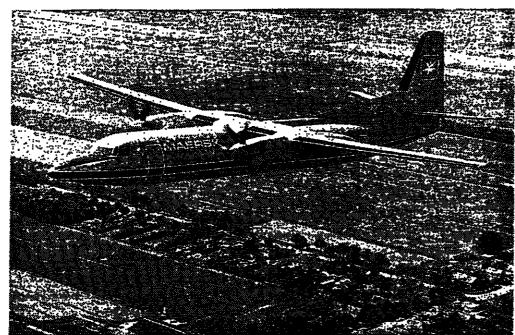
the expected 49 per cent.
But despite the impressive recovery Fokker almost certainly will not survive alone. Development costs of new aircraft are so beavy that a smallsh aerospace company such as Fokker cannot carry them. Further, the Hague ordered Fokker to find a business partner by 1990 as part of the strings on its rescue package. Mr Reinder van Duinen, one

of the three members of the board, says Fokker is talking to any number of European aerospace companies, including Messerschmidt-Bolkow-Blohm (MBB). The West German aerospace company already makes fuselages for the Fokker 100 and the co-operation was deepened last year when MBB and Fokker signed a collaborative pact on further joint efforts, including a possible merger

Fokker specialises in commuter aircraft such as the 50seat Fokker 50 turboprop and 100-seat Fokker 100 twin-jet. Since its founding in the early part of this century, the com-pany has glided along as an independent, but last May the Dutch government took a 16 per cent stake as part of its

That stake will be raised in a second rights issue this autumn although it will be no higher than 49 per cent. An issue price of Fl 20 per share was stipulated in the rescue package but that is currently

being negotiated. Under the rescue package Fokker received Fl 212m in fresh aid from the Government plus relaxation of repayments on some development credits.



mercial banks another Fl 400m in new credit lines.

Fokker suffered a loss of Fl 107m on sales of Fl 1.06bn in 1987. Development costs of the short-haul F-50 and mediumhaul F-100 have surged to nearly double the original esti-- Fl 1.6bn instead of the original Fl 1bn.

But the company expects to at least break even this year when cashilow improves as a result of the fresh loans. A sweeping cost-cutting programme is also being launched but probably will not yield results for a couple of years.

Nevertheless, serious probems remain. Fokker is barely able to deliver aircraft on time, the most recent example being in July when it said 10 F-100s for KLM Royal Dutch Airlines would again be delayed.

Launching two new aircraft at the same time has proved profoundly more difficult than expected. Aircraft parts have not been ready on time, production managers have been ill-informed and employees have been restive about emergency overtime work.

Mr van Duinen says assem-bly lines are now rolling more smoothly and the production tempo of both aircraft is being stemed up. About three F-100s per month are supposed to roll off the line by the middle of next year compared with one a month now.

higher debts that have sprung from the rescue package, at least Fl 433m.

A debt-to-equity ratio is diffi-cult to calculate, explains mr van Duinen, because the government development credits can be viewed as either debt or equity. But he does concede that the debt burden is more punishing now that govern-ment credits have been put on the balance sheet.

The low dollar has not made life easier for Fokker although currency problems are milder than in the past. Because air craft are always priced in dol-lars and Fokker's costs are in guilders, the Dutch company's competitiveness has suffered, especially against the Ameri-can giants Boeing and McDonnell Douglas.

Dollar costs are hedged for this year and next and Fokker also is trying to move production to low-cost countries. Just recently, an agreement was reached with IPTN of Indonesia to make some parts for the F-100 in that country.

Within Fokker, management is struggling to repair its ranks after a rash of resigna over the past year. Two of the three members of the management board, including Mr van Duinen, are new, as are a flock of middle-level managers.

A psychological blow was dealt by the sudden resignation of Mr Harry Langman, total of more than FI 900m in is soon enough. Sufficient cash development credits and comflow is needed to service the industry, earlier this year.

The only chief executive who has remained to provide much-needed continuity is Mr Frans Swarttouw, Fokker's swashbuckling chairman. He determinedly refused to resign late last year when several Members of Parliament vociferously urged him to do so in light of the company's trou-

For the future, Fokker will soon have to start considering successor to the F-50 and F-100, a decision which will be the major impetus behind a joint venture of whatever kind. Various combinations of small aerospace groups have been mentioned, including Fokker, MBB, Saab-Scania, Construcciones Aeronauticus and Short Brothers.

in September when Daimler-Benz is supposed to decide whether to take over part of MBB. That could pave the way for a deal between Daimler and its aerospace subsidiary, Dor-nier, MBB and Fokker.

Fokker has been down this road before with an ill-fated merger with VFW, a forerunner of MBB, in 1969 and a joint venture with McDonnell-Douglas in 1982. In those cases both partners optimistically hoped to exploit the burgeoning mar-ket for commuter aircraft that was being unleashed by "open

But now sheer survival is at stake and greater willpower is likely to the determining fac-

civil and military. Having within the past year maintained, though not much

increased, its toehold in the

Laura Raun

SWEDEN

# Lean period in the offing

THE SWEDISH aerospace industry, centred around Saab-, faces a lean period. The large investment needed to develop and produce the JAS-39 Gripen multi-role comcommuter airliner means that the company's aircraft division probably will not recover sustained profitability until the early 1990s.

The division reported a loss

of Skr 33m in 1986 and Skr 43m in 1987 despite a 36 per cent rise in revenues, due largely to sales of the Saab 340, from Skr 3.27bn to Skr 4.4m.

The last two years of losses underscore the risks Saab-Scania has taken in the aero-space sector during the 1980s. It committed itself to developing what is claimed to be the world's first traily multi-role combat aircraft, able to inter-cept, attack and carry out reconnaissance missions without special variants, under a strict fixed-cost contract.

Simultaneously, it decided to embark on its first major forav into the competitive civilian aircraft market with the Saab

While the gamble on this aircraft appears to be paying off, there are growing doubts that the JAS-39 programme, Sweden's largest military project, will generate major profits for the four-company consortium, headed by Saah-Scania, that is building the aircraft.

A report released in July by the Swedish defence procure-ment agency FMV disclosed that development of the JAS-39 had fallen a year and a half behind schedule, creating "a risk for unplanned cost increases." Analysts believe the delay could add another Skr 1bn to the project's approved budget of Skr 40.8bn.
The JAS-39 consortium, which includes the Saab Air-craft Division, Volvo Flygmotor, Ericsson Radio Systems

and FFV Aerotech, would have to bear any extra costs under the programme's fix-cost con-FMV said the delays centred on the development of the aircraft's RM-12 engine, a modifi-cation by Volvo Flygmotor of General Electric's F-404 engine,

and its advanced fly-by-wire flight control system. As a result, the first test flight of the JAS-39, originally scheduled for the autumn of 1987, has been postponed until late 1988. FMV has warned that delay in the aircraft's initial delivery date, set for 1992, "cannot be ruled out," although Saab remains pub-licly confident that the dead-line will be met.

However, the possibility that the Swedish Air Force deal may bring in only slim profits has increased pressure on the JAS-39 consortium to find

Although Sweden has not successfully sold any combat aircraft abroad since the Draken of the 1960s, Saab's president, Georg Karnsund, argues that the JAS-39 has a better chance to find foreign customers than its costly pre-decessor, the Viggen. It is ligh-ter, more versatile and easily maintained by conscript personnel, making the JAS-39

ideal for smaller countrie Saab concedes though that prospects for foreign sales are ikely to diminish if the Swedish Air Force decides not to sm Air Force decides not to order a two-seat trainer ver-sion, the JAS-39B. Potential buyers, which include Austria, Switzerland, Norway, Denmark and Finland, have indicated that they would drop consider-ation of the aircraft if the trainer is not provided

FMV has stated that "there is no room in the current JAS framework" to support devel-opment of the trainer aircraft. The estimated development cost of the JAS-39B is said to have climbed from Skr 800m to Skr 1.8bn. A final decision on the JAS-39B is expected in late 1908, with the Swedish Air Force considered likely to opt for training JAS pilots on simulators insi

Sahb says it will not develop a trainer on its own, explaining that this would be too expen-

Saab must also worry that a slip in the production schedule will harm export orders. It has: placed an order for 30 aircraft, with Switzerland for the with an option on another 110. JAS-39 since its initial export

exceeded the Swiss deadline. Saab is also finding that the country's restricted defence budget may threaten its future development of missiles. Hav-ing completed work on an airunched version of its RBS-15 anti-ship missile, Saab's missile division recently proposed developing a first-generation

"fire and forget" air-to-air mis-sile for the JAS-39. The project would involve cooperating with British Aero-space on an improved version of the latter's Skyflash followed by a Swedish-built mis-sile with greater range.

But the Swedish government is balking at the programme's estimated Skr 6bn price tag. It may decide to order the updated Skyflash 90 directly from British Aerospace, leav-ing Saab without a major missile development project.

The future appears brighter for Saab's civilian aircraft programme. Since the Saab 340 went into production in 1984, the company has succeeded in its goal of capturing a third of the world market for 30 to 40seat twin turbo prop commuter aircraft, with 140 delivered or on order to 27 airlines. Saab's ain competitors are the de Havilland Dash 8 and Embraer's Brasilia 120.

The Saab 340 has become the market leader in its category in Western Europe with a 70 per cent share and the company claims a third of the rapidly-growing US market. A small footbold in Asia has also been established through a deal with a Taiwanese airline.

In an effort to increase sales,

Saab has begun production of a new version of the 340 with a more powerful General Electric CTD-9 engine that boosts the aircraft's speed from 500 to 650 kilometres an hour. The company is also considering devel-oping a stretched version that would seat 50.

Though its order book is nearly full, Saab will have to wait several years before it reaches the break-even point on the commuter aircraft, which was originally a joint programme between Saab and Fairchild of the US.

The US manufacturer pulled out in 1985 for economic reasons, forcing Saab to invest another Skr 600m for the construction of a new wing factory and other production facilities. This raised the break-even point for Saab from 200 sircraft to 250-300 and caused delivery

Saab and its Swedish aero space partners, principally Volvo Flygmotor, have long relied on military orders for their survival, but civilian aerospace business is expected to be increasingly important to their future.

For example, civil aircraft orders will bridge the gap between the phase-out of Vig-gen production in 1990 and the start-up of the JAS-39 in 1992. Aware of their over-depen-

nce on military funding Saab and Volvo have been seeking participation in international airliner programmes during the 1980s and the civil aircraft route may prove eventually to be the salvation of Sweden's, aerospace industry.

John Burton

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Mr George Gevers, managing director of Fabrique Nationale (FN) Moteurs, as well as cur-rent president of the Gebecoma trade association of Belgian aeronautical companies, detects a new industrial policy on the part of the Government, and puts it down to the better regional balance that now

exists in his industry. Because of the historic roots of Belgian aerospace in French-speaking Wallonia, it has been hard for politicians representing the country's Flemish majority to consider the industry as worthy of retignal support

national support.
But Flanders is now getting its fair share of work. In making wing parts for the Airbus A-330 and A-340, for instance, Asco of Zaventem (Brussels Asco of Zaventem (Brussels Airport) and Watteeuw of Bruges are dividing production work evenly with Sonoca of Gosselies (the semi-public company formed a decade ago to take over from the bankrupt Fairey operation in Wallonia).

The increase in the importance of avionics, relative to engines and airframes (Walloon specialities), has also helped Flanders-based electronics companies win more contracts.

Mr Gevers says the Government has thus made relatively little fuss this year in deciding in principle to pre-finance the non-recurring (ie research) costs of the latest Airbus A-330 models, even though the property of the latest Airbus A-330 models. and A-340 models, even though the overwhelming proportion of aerospace R&D is still carried out in Wallonia.

Fighter choice close

BELGIUM

But how far the Belgian gov-ernment is prepared to take local industry's interests into THE BELGIAN aerospace industry is, by turns, anxious about its two streams of work account in choosing a new fighter for the late 1990s is

another question. The choice is between buying an update of the General Dynamics' F-16, which the Belgian Air Force already files, or the new, yet-to-be-developed French Rafale.

loose jigsaw piece in the emerging pattern of European procurement of the next generation of fighters.

Britain, West Germany, Italy

Government is at:last giving real support

and Spain are locked into the Eurofighter project. France is going ahead alone with the Rafale, though it is desperately keen for a partner with which to share development costs.

The Netherlands, Norway and Democrat here already

and Denmark have already committed themselves to at least the "pre-development" phase in modernising the F-16, which they co-produced with General Dynamics for the air forces in the 1970s — only Belgium is hanging back.

The Belgian aerospace industry has taken no formal position in the F-16/Rafale debate.

Mr Gevers says, except to tell the Government it must take a

the Government it must take a speedy decision and involve local industry in R&D, not simply in co-production.

"Belgian industry realises it cannot continue acting simply as a 'compensatory' contractor for the Belgian Air Force," he says, referring to the way in which governments can, and do, demand a high proportion of compensatory or offset work for large military contracts placed abroad.

for large military contracts placed abroad.

He admits the original F-16 contract provided a lot of work for the country's three big aeronautical companies — FN, Sonaca and Sabca (jointly owned by Dassault of France and Fokker of the Netherlands) — and a secte of others.

 and a score of others.
 But, speaking for FN alone,
Mr Gevers evidently would prefer the Rafale. FN's return on the F-100 engine for the F-16

the result of the US Air Force demanding competition and two sources of supply for F-16 engines from both Pratt and Whitney and General Electric, and thereby requiring even FN in Liege to set up two production lines.

More important, FN could get in on the ground floor with Rafale engine development, while it would just continue as co-producer and subcontractor to the US engine makers. General Dynamics claims that Bel-gium's cost of developing the undated F-16 would be \$50m, compared to \$500m for Rafale. That is undoubtedly a deter-

rent to the Belgian govern-ment, but to FN it means that it might get 10 times the devel-opment work if the Government opted for the French

Co-development of the Rafale might lead to a more lasting relationship. Last year FN Moteurs became a separate company, spun off from its s-making parent in the hope of attracting outside minority stakeholders in the FN subsidiary. Other companies such as Sabca (half French-owned) seem to be inclined towards the Rafale.

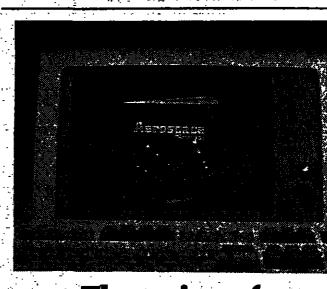
With a socialist, Mr Guy Coeme, now as Desence Minister in a Cabinet pledged to cut spending, the Government must think hard before opting

for the more expensive of the fighters on offer.

It will probably also want to put off as long as possible a decision on a new light attack and recommaissance helicopter. on offer to Brussels are the B0-105 of Messarschmitt-Bol-kow-Blohm of West Germany, the Ecureuil from Aerospatiale of France, and the A-109 from Agusta of Italy. But for a jet trainer, there is homegrown product — the

Squalus – very much on offer to the Belgian Air Force from its Charleroi manufacturers and promoters, Sonaca and

The latter claims there is a great deal of foreign interest in the Squalus, but that foreign-ers first want to see the trainer endorsed at home by the Bel-gian Air Force buying it.



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# Deeper losses jolt public sector favourite

Casa recorded pre-tax losses of the duration of a nour year.

Pta 14.20m in 1987, the worst in bility plan. Productivity comes high on the company's rescue SPAIN'S SPAIN'S AEROSPACE manufacturer Constructiones Aeronauticas (Casa) has gone its history.

The disastrous results have at least joited the company's in a couple of years from being the darling of the public sector

proprietors, management and the labour force to take a long corporations, comfortably in the black, well connected and confident of its future, to being hard look at the prospects for a problem for its owners, its employees and its interna-On the plus side there has

been a remarkable coincidence After posting a Pta 1.6hm profit in 1985, making it the fifth most profitable company and on the steps the company must take to return to health. among the dozens controlled by public sector holding Justi-A firm of international consultants hired last year to report tuto Nacional de Industria on Casa noted under-capitalisa-tion, low productivity and an (INI), Casa went into a noseirrational excess of programmes. All parties were in Losses of Pta 8.6bn in 1986 prompted drastic action by INI in the form of the removal last broad agreement.

In the wake of the report, Mr Alvarez Vara said a key prob-lem is that Casa's works sys-tem had remained unchanged for some 20 years and that Pta 30bn-worth of investments were required to fully modern-

Alvarez Vara. However, the first year of ise the company.

Earlier this year Casa's chairman received the green tenure by the new chairman has falled to even contain the damage. Although sales were light from INI for investments worth Pta 34.7hn spread over up by Pta 3.5bn to Pta 48.9bn,

According to Mr Alvarez Vara, income should, be in excess of Pta Stn per each of the company's 10,000-odd employees instead of the Pta 5bn figure of the last financial

jadores (UGT) trade union went even further than the management. It suggested that there should be a productivity target of Pta 10bn per employee.

The union reported that "an absolute lack of motivation" on the part of the labour force was reflected in absenteeism that was well over the 10 per cent vel in some of Casa's seven UGT revealed that virtually

every one of Casa's interna-tional cooperation pro-grammes, and especially those concerned with the Airbus project, was behind schedule and that production line delays had prompted McDonnell

the duration of a four-year via-bility plan. Productivity comes 2bn-worth of business from the high on the company's rescue Spanish company in the past

The four-year viability plan which Mr Alvarez Vara

round are a productivity increase which will raise income from sales to Pta 90.7bn in 1990 and 1991, and a financial restructing that will raise

All parties are in broad agreement that the company needs to be modernised

announced with the New Year included severe action aimed at boosting plant activity. A redistribution of work systems at the company's plants in Seville, in Cadiz and in Getafe, south-east of Madrid, seeks to reduce 700,000 subcontracted

labour hours to 300,000.

The financial ratios of the four-year plan are ambitious. Mr Alvarez Vara seeks to reduce pre-tax losses to Pta 10.7bn this year and to Pta 3.9bn next year. The year 1990 has been earmarked as the point that Casa turns the corner with Pta 800m profits and the plan envisages a rise to a Pta 1.2bn profit in 1991.

capital from the Pta 9bn 1987 figure to Pta 33.7bn in four years' time and reduce financial costs over the period from Pta 8.7bn to Pta 6.1bn.

Out of the Pta 34.7bn invest-ment package, Pta 5.6bn is allocated to the EFA new Eurofighter project in which Spain has a 13 per cent share. A fur-ther Pta 43bn of the package is earmarked for Casa's cooperation in the McDonnell Douglas MD-11 project. Such sums underline the

guiding philosophy at Casa which, bluntly put, is collaborative programmes or bust. international commer cial clout falls far short of the an aerospace industry and the domestic market is puny. Casa's tailspin into financial

troubles was caused by its necessary dependence on the highly-competitive international market, a market made all the more problematical by the strength of the peseta against the dollar, and by its specific failure to penetrate the US

asa's actual products consist of the so-called "Jeep with Wings", the all-purpose Stol C-212 Aviocar which has a lot of the romance of the old DC-3 and, arguably, an equivalent amount of its obsoles CN-235, an updated Aviocar produced in a co-venture with the Indonesian company Nurtanio and has the "Jeep's" same design philosophy; and a basic military trainer and ground-attack aircraft, the C-101, whose days are num-101, whose days are num-

As stables go it is not one to excite the betting markets as Casa knows only to well. Start-up costs for the CN-235

have been punishing and the returns have yet to be seen. Casa hopes to sell some 15 military versions of the aircraft a year and a further seven for civil use. The chief market is formed by the developing countries as was the case

with the the Aviocar's prede-

The alternative to the daunting prospects of creating and selling one's own products is to join the international projects and develop high tech and specialised skills. In this context the EFA programme is the big leap forward for Casa and for other Spanish companies

involved in the project. Casa, in this case, is making part of the Eurofighter's wing and will be assembling all the aircraft for the Spanish Air Force. The EFA programme has bold government backing and much the same can be said for institutional support for the European Space Agency. This gives Casa hopes of developing its own avionics programme for the future Hermes and for building the spacecraft itself.

Sophisticated specialisation lies behind the Casa's collabo-ration in the MD-11 project for the Spanish company will be providing the stabilisers. This is a technology developed by Casa in part because of its role in the Airbus project and in part thanks to the offset agreements which followed the ourchase of F-18As by the Spanish

More of the same could come if and when Casa decides on an international partner to develop a new fighter dubbed the AX aimed at complementing the EFA and the F-18A and replacing the Spanish Air

Force's flight-weary F-5's. One possibility is a link with British Aerospace to developing Spanish versions of the Hawk jointly. The AX must also have an optional training capability

The contract is therefore a substantial one and by that time Casa should be back in the black and again a government favourite.

Tom Burns

# Looking for a new identity

ITS WINGS clipped by last craft, has been halted; while year's government decision to prospects for the four-year-old cancel the Lavi combat aircraft, state-owned Israel Air-craft Industries (IAI) is casting around for a new identity - as well as a convincing raison

year of Casa's chairman Mr Enrique de Caralt and his

replacement by one of the pub-lic sector's prestige trouble-shooters, 41-year-old hir Javier

tional partners alike.

After a generation of steady progress up the rungs, from repairs and upgrades to design-ing and building its own military aircraft, Israel's aerospace industry without question has been brought back to earth

with a painful fhump.

Where the manufacture of complete aircraft once had pride of place, more than half IAI's annual turnover of about \$1bn now comes from its technologically advanced electronics division.

Maintenance and upgrading work adds another quarter. Include missiles and mini-RPVs, pilotless drones, and lit-tle is left over for the aircraft

Indeed, apart from the com-puter doodlings of the company's engineers, not a single new manned aircraft is either in production or being seri-Ben Gurion Airport headquar-ters. Production of the Arava, an ungainly Stol transport airAstra executive jet, only 12 of which have been sold after development costs of USD

200m, do not look good. The Lavi was intended to give the country strategic independence from foreign suppli-

aid - as well as two thirds of the money allotted to the Cobra upgrade.

A juicy reward for the bitter-ly-contested decision to cancel

the Lavi was the recognition of Israel by Washington late last

Foreign Military Sales (FMS)

Not a single manned aircraft is either in production or being seriously contemplated

ers, but its abandonment on cost grounds, under pressure from the Reagan Administration, has — unsurprisingly — ended up leaving Israel deeper in the pocket of the US than

The bulk of the new work to come Israel's way in recent months has come via the Pen-tagon. This includes the Arrow project — the development of an Anti-Tactical Ballistic Missile designed to counter the Soviet SS-21 short-range missile — and a night-targetting system for the two countries Cobra helicopter gunships. In all, the Pentagon has

agreed to provide 85 per cent of the funds required for the Arrow ATEM - 80 per cent

year as a "Nato-equivalent" ally. This permits Israeli com-panies to bid for Pentagon contracts on an equal footing to those from Western Europe, and could be of considerable

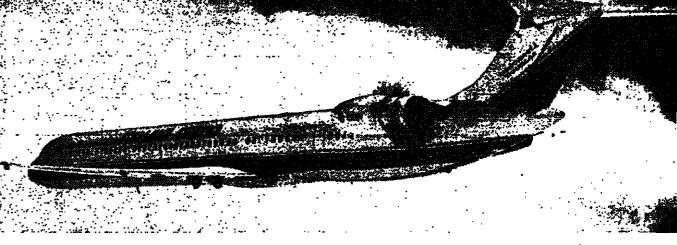
Ever since France's arms embargo at the time of the 1967 Arab/Israeli War, the country's aircraft procurement policy has been directed exclusively to the US, a practice reinforced by the latest acquisitions and planned purchases of both the airforce and Kl Al, the civilian carrier. Seventy five of General Dynamics' latest production F-16 interceptors - the F-16C/ D - are currently being delivered in straight compensation for the Lavi, together with five

IAI would dearly love to enter into a co-production agreement with the US com-pany on the even newer "Agile Falcon" variant of the F-16 as well, but has been temporarily blocked in its ambitions.

According to a specialist Israeli defence publication, Sword, the Israel Defence Forces also has its eye on the McDonnell Donglas F-18, and on new assault helicopters such as the Sikorsky Black Hawk or the McDonnell Douglas Apache AH-64. Much will depend, though,

on priority uses for the \$8.6bn in FMS grants promised Israel by the Reagan Administration for the current fiscal year and for 1988-89. Any hint of a future cutback in military aid for Israel by the incoming US iministration could put these plans on ice.
As for El Al, the national

sirline has recently completed arrine has recently configured the first phase of a long-term, re-equipment programme provisionally budgeted at \$1.5bn. This year, it has taken delivery of three new Boeing 757s as replacements for old 707s be retired and another 747-200. All four purchases were self-fi-



McDonnell Douglas demonstrate their new MD-91 prop fan alritner at Famborough this year for the first time, with an eye to winning the first orders from the airlines. The fuel-efficient engines offer a breakthrough in flying costs

However, in a significant departure from its established practice, for the first time in a quarter century El Al has gone back to Rolls-Royce engines, choosing the RB-211 power plant for the twin-engine 757s

over its US rivals.

For the second phase, intended for the early 1990s, El Al says it is considering acquiring an unspecified number of Boeing 747-400 and 767-300ER passenger aircraft. The latter will be capable of flying non-stop from New York to Tel Aviv, the airline's most impor-

tant route, and are envisaged for low-season periods when the big 747s are not required. Amid the gloom and intro-spection at both IAI and Bett

Shemesh Engines, Israel's near-bankrupt aero-engine manufacturer, the upgrading and retroliting of aircraft and engines has become one of the

best lines of business. Drawing on its own long experience in improving other countries' warplanes, IAI is to convince the Israeli Air Force and foreign customers of the cost benefits of this approach to modernisation.

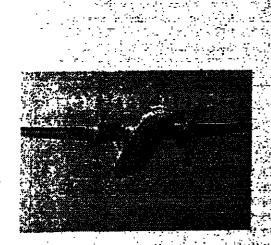
The F-4 Phantom, a workhorse fighter/bomber still in service with many airforces around the world, has been revamped extensively and dubbed the Phantom 2000. The old Mirage III and V aircraft. and the A-4, have similarly been given a new lease of life.

Colombia, which has a close military relationship with Israel, recently sent its Mirage Vs for upgrading, according to Sword, in a deal worth \$30m. It has also agreed to purchase 13 Kfirs, the Israeli-improved version of the Mirage IIL

But, in the fiercely competitive world of military exports, the Israelis are finding that little quarter is given by anyone. A prospective contract with Spain to upgrade its large fleet of Mirage Vs was lost to France, while a planned sale of Kfirs to Honduras was snatched away by the US itself.

**Andrew Whitley** 

The meek may inherit the earth. But the bold will switch carriers.





The Dash 8 sets bold new standards for regional airliner reliability, boosting passenger loyalty to new heights: Durability. True to the de Havilland tradition of robust aircraft, the Dash 8 easily handles the tough demands of a regional airline schedule. Its superior

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Moreover, since routine inspections are required less often, the Dash 8 doesn't have to be sidelined for maintenance every other day or so.

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Profitability. The Dash 8 is easy to maintain, cost-efficient to operate, and consistently meets performance targets. Operators and passengers know they can rely on the Dash 8. And that's the bottom line.

**Reliability** 

**Boeing Canada** de Havilland Division

#### Seeking new niches Boeing, now owner of de Havilland Canada, has over-hauled the operation com-pletely and has won strong

industry has emerged much stronger from the recession and two privatisations of the early 1980s and is reaching out into international markets and trying to find new niches.

As Mr K E Lewis, President of the Aerospace Industries Association of Canada, puts it: We must find ways to co-operate more in major development projects with other nations; yet we must also ensure we can compete against the fast-grow-ing number of players in world aerospace."
Canadian aerospace will gen-

erate sales of about C\$5.5bn this year, and about 80 per cent of production is exported. The industry employs about 60,000 and about 80 per cent of the activity is concentrated in Que-bec and Ontario and the rest is spread out in the Maritimes, the Prairie Provinces and Brit-ish Columbia.

Aerospace accounts for about 20 per cent of the manufacturing sector's research, mainly through Pratt & Whitney Canada, the country's sole engine-builder, and several large companies, such as Spar Aerospace, Canadian Marconi and CAE Industries, in specialist areas, such as communcations, avionics and space-handling equipment. Yet, the industry knows it must invest more in research to maintain

its international position. Despite a modest 25m population and the small domes market, the industry ranks fifth in the West. But it may soon be displaced by Japan, now putting major resources

The Canadian industry designs, develops and makes an enormously wide range of an entrinously wide range to products from business jets, helicopters and commuter air-craft to small jet and turbofan engines, from sophisticated electronic components to communications satellite systems, complex defence products, remote manipulation systems, and military, commercial and industrial simulators.

Yet, Canadian aerospace is gaining new confidence as an international participant, though it accepts it must remain primarily a niche

port this view, such as the C\$665m acquisition of the US Singer Company's Link domes-tic simulation and training systems division.

The two largest Canadian airlines, Air Canada and Canadian International, are committing several billion dollars to firm orders and options for the Airms A-320, and this is expected to lead to a C\$1bn order for Canadair Ltd to supply A-330 and A-340 airframe parts over a

15-year period. Canadair has the maintenance contract for Canada's CF18 fighters, and improving international markets for the Challenger business jet and for its battlefield surveillance system being developed with West Germany and France.

It is planning a 48-seater commuter version of the Chal-lenger to meet the needs of long and thin regional feeder

representing about 20 per cent of the cost of each aircraft. The US remains far and away the largest customer of Canadian aerospace, despite strong efforts to diversify mar-kets. Products move freely over the border, but US non-tariff barriers are still worrisome.
Mr Lewis remains bullish

international support for the

Dash-8 turboprop commuter sircraft and plans a new 70-pas-

senger version. The Bell Textron Helicopter

(Canada) plant in Montreal,

which started up amid furious

which started up and turious political controversy two years ago, is quietly making two series of commercial light heli-copters, while continuing lon-

ger-term development on an

advanced Canadian-engined series. A smaller plant in

Ontario, MBB Aerospace Can-

ada, began with a good Govern-

ment order base.
The Bell plant may benefit

directly from the choice of the Anglo-Canadian EH-101 heavy helicopter to replace the Coast

Guard Sea Kings. The order

may be increased substantially to more than 50 aircraft and

could lead to some interna-

Canada has also benefited from the transfer of defence

technology from the US, and scores of smaller avionics, component and other speci-

US military under Canada-US defence sharing agreements.

But this business may soon level off with American

defence cutbacks. Generally

about one-third of Canada's

aerospace activity is defence-related.

Douglas is the largest US air-frame builder operating in

Canada. The Toronto plant is busy building MD-80 wings,

Besides Boeing, McDonnell

ed contractors supply the

tional specialisation.

about the future, and sees industry volume reaching C\$7bn or more in 1990 or 1991. He says the industry must do more research to build on its reputation for quality and delivery. A 7 per cent of sales ratio is far below other developed nations' performance.
The industry must hook directly into international

the hypersonic flight of the future, in order to keep up with the technological race. But he says Canada is not turning out enough qualified engineers and technicians and lacks a national training strat egy because of jurisdictional problems between Ottawa and the provinces, which constitutionally control education.

based programmes, including

says.
The heated political debate over the location of Canada's Space Agency does little to solve longer-term structural problems. The Agency may well land up in Montreal.

Companies still lack forward

planning for the most part, he

The Japanese preoccupation with an ultra-sonic aircraft able to fly between New York and Tokyo in three to five hours, creating teams to research advanced engines and fusilage materials, is a sign of

things to come.

Canada needs to be part of such ambitions, says Mr Lewis. "We must co-operate and we must compete.

Robert Gibbens

PRIVATISATION is the dominant issue in Argentina's civil airline industry. The Radical Party government faces considerable problems with massive state spending and

servicing a \$56bn foreign debt.
One of the ways it is trying to tackle those difficulties is by selling off state-owned indus-tries including part of the national flag-carrier, Aeroli-

neas Argentinas.

In February this year the Ministry of Public Works announced that it had begun discussions with the Scandinavian airline, SAS, to sell 40 per cent of Aerolineas Argentinas to SAS. So far no firm details have been announced about the sale, and inside Argentina there are contradictory reports on the progress of the discus-

Even if the deal is formally concluded by the Argentine government and SAS, it still has to be approved by Congress, Argentina's parliament. There is considerable political and industrial opposition to it, and it looks most uncertain to ever happen.

Argentina's other major civil airline, Austral, was sold to private ownership in December 1987 and, according to its latest audited accounts, is beginning to achieve reasonable profits, despite the loss of a DC-9 in a crash in Misiones province in June this year.

The Argentine group Cielos, del Sur took ownership of Austral last December, paying \$28m for the company. The Government assumed all of Austral's outstanding debts as part of the deal. During the first quarter of 1988 Austral achieved an audited operating profit of \$3.4m, with a break-even passenger load fac-tor of 46.2 per cent, which it

#### **ARGENTINA**

## Sell-offs for cash

in the industry.
In 1987 it carried a total of 1,436m passengers, with an average aircraft load factor of staff: 190 pilots, 300 flight per-sonnel, 360 technical mainte-nance staff, and the remainder. in administrative jobs.

Presently limited to domestic routes, Austral serves 26 cities and has market participation of 25 per cent. Its fleet consists of eight BAC 1-11s (500 series) and three DC-9 80/81.

The BAC craft are directly owned by the company while the DC-9s are leased from

McDonnell Douglas and will become the property of Austral in 1993. Austral is keen to expand its operations to cover routes outside Argentina, and es to see keener competition in the domestic market.

unon in the domestic market.

Aerolineas Argentinas is in a
less fortunate financial position, being saddled with a
\$1.07bn debt, and dependent on
government subsidies. Believed
to be too known in administration. government substates: Benever to be top-heavy in administra-tive personnel, Aeroliness is protected by the Argentine state, which is concerned to preserve it as a national flag-

However, the Argentine gov-

ernment has been keen to finalise a part sale to SAS, with Aerolineas valued at \$475m at the beginning of August this year. Discussions on the deal have been protracted but under the terms of the sale SAS is to take 40 per cent, the Argentine government will keep 51 per cent and the other

seep 51 per cent and the other 9 per cent will be offered to the airline's employees.

A rival offer has been made by Cielos del Sur, which has brought together Alitalia and Swissair in the bid. It is known that Cielos del Sur regards the \$60m down payment SAS is expected to make as surprisingly low, and disputes the total valuation of the airline.

However, Mr Rodolfo Terragno, Minister of Public Works, who has responsibility for the privatisation programme, has firmly maintained that the deal will go ahead with SAS and not Cielos del Sr.

The Aerolineas fleet consists of six Boeing 747-200s; one 747-SP; two Boeing 707s; eight Boeing 727s; 12 Boeing 737s and 4 Fokker F28s. The company runs a staff of 10,325 and in 1967 carried just over 4m pasngers on domestic routes to almost all Argentine cities, and

29 international routes with an average passenger load fac-tor of 65.45. tor of 65.45.

The interest being shown by SAS in buying into Aerollness is undoubtedly because of the access this would give to Latin American routes, not forget-ting that, at the price, Asphi-neas seems to be a bargain.

On the military front, Argen-On the muse, tina's Fama (Fabrica Argentina Aerospacial) in de Materiales Aerospacial) in Cordoba, is optimistic that it may soon sell the IA-63 Pampa jet trainer to the US Air Force. The Pampa has been under development since 1979, and it is thought that the US may be in the market for up to 600 aircraft. If such an order were to be made it could be worth

\$2.5bn to Argentina. in July this year Argentina conducted a successful test flight of the country's first remote piloted aircraft, the Bigua. A version of the Italianmade Mirach 100 RPV (which is see and land-launched), the Bigua is launched from a larger aircraft, giving it a dis-tance advantage. A range of additions cater to the different needs of potential purcha

**Gary Meed** 

#### BRAZIL

# Limits of finance

EMBRAER, fast-growing aircraft manu turer, has reached the limits of its financial endurance. It must deal urgently with its ugly debt profile to keep to its devel-

pment timetable. In the 19 years since its foundation, Embraer has grown to dominate two niche marke claiming superiority in the

commuter aircraft and turboprop trainer sectors. It has begun work on a new commuter aircraft and it aims to become a big supplier of parts and aerostructures to the main US and European jetliner manufacturers. But its AMX

subsonic ground attack aircraft has got off to a difficult start.
Although it expects sales this year to grow by one quar-ter to \$600m, Embraer needs to straighten out its debt problems and reinforce its capital base. Mr Ozilio Silva, its chief executive, says he hopes to tie up a \$183m capitalisation pack-age by the end of the year. Embraer has already begun

craft. It is designing the CBA-123, a 19-seater commuter aircraft, and later plans to introduce an extended version of its handsome 30-seater Brasilia and an anti-tank version of its

Tucano turbo-prop trainer.
Mr Silva says that by 1991:
"Embraer will be in an extremely strong position, at the cost of substantial invest-ments." He plans to cover the entire range of regional air-craft models, offering 19 to 40-seat aircraft.

Embraer must commit about \$500m to develop the CBA-123 and the 40-seat extended ver-sion of the Brasilia.

Embraer has other projects up its sleeve, such as a super-sonic fighter trainer. It has presented designs to the Brazilian Air Force, which has put such a venture on hold for lack

The project is unlikely to go ahead until the Air Force's

The Government is Embraer's biggest shareholder and the Air Force its most important single customer. That is as much a liability as an asset, since the federal



health.

Treesury is close to insolvency. The company has already had to slow down deliveries of the 80 AMXs earmarked for the Air

Financial engineering is now at a premium at Embraer. The Government's economic difficulties have made it difficult for Embraer to raise long-term loans. We can't develop the CBA 123 on short-term funds," Mr Silva, says. Embraer has \$180m in

short-term loans - much more

than its \$150m net worth. Bndes is likely to capitalise its \$138m loans outstanding to Embraer. The company expects to attract a further \$50m in debt to equity conversions At the same time, Embraer has become an innocent victim of the United States' trade

wars with Brazil. Last November, Washington said it was considering imposing punitive duties on Embraer sales to the US, its largest market. Although the US has said

since said that it is lifting the threat, it has not officially noti-fied Embraer. However, Mr Silva believes that the company will be spared the new round of trade disputes between the two countries.

These disputes have caused another big financial headache for Embraer. It has had to provide its US customers with letters of credit, at a cost of \$2.8m in annual interest

charges.
The letters of credit would be used to offset retro-active US duties. Embraer has orders and options for 209 Brasilia aircraft from American operators. Foreign trade and interna-

tional co-operation is becoming increasingly important for Embraer. Its domestic market

talia have 70 per cent of the AMX project. The AMX has been attacked for running over cost and straining Embraer's finances, but the company rejects the criticism.

all sales five years ago.

is still weak and the countries

regional airlines in poor

more attention to its overseas

business. Exports now account for 70 per cent of total sales, compared with 44 per cent of

Argentina's Fama has a 30

per cent stake in the CBA 123 project. Aermacchi and Aeri-

As the domestic market shrinks in importance, Embraer is devoting more and

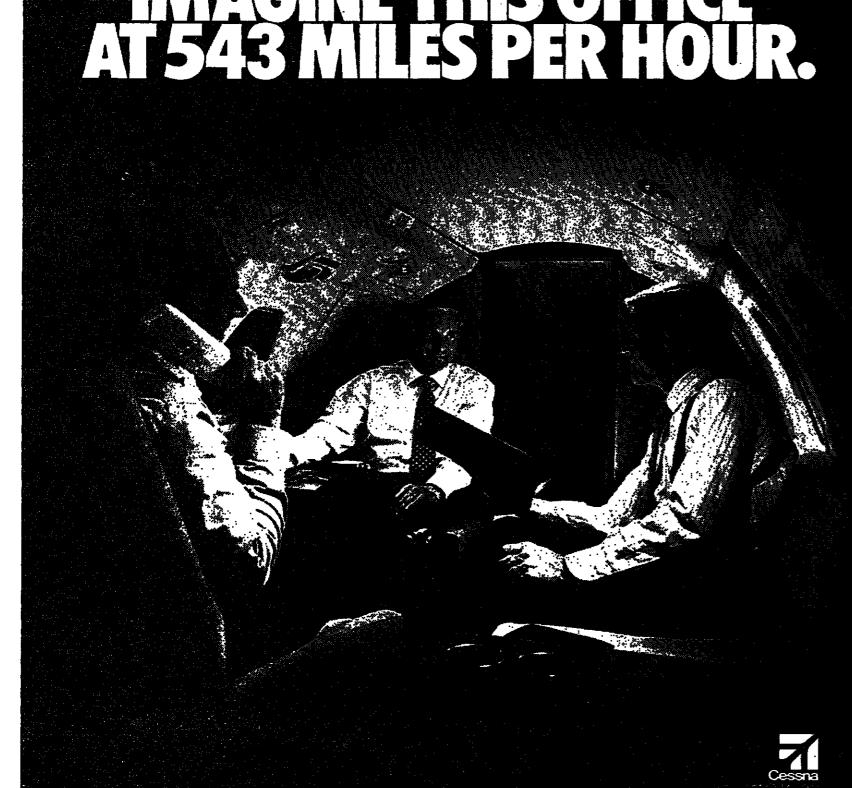
Mr Silva says he hopes to ing business into its third main activity. Embraer has begun shipping

wing flaps to McDonnell Doug-las as part of a \$120m contract to supply the MD-11 wide body airliner. And it has held talks with Spar, the Canadian satal-lite builder, which built Bra-zil's two domestic communica-tions satellites. Embraer would supply Spar with external

It has also been in touch with Boeing, which might buy aerostructures from Brazil. Bell, the US helicopter manufacturer, discussed a cooperation deal with Embraer, but the talks petered out after Bell lost a bid to sell 52 helicopters to the Brazilian Army. A consortium of Aerospatiale and Engesa, a Brazilian armoured Engesa, a Brazilian armoured vehicles manufacturer, won

the \$245m contract. Embraer will probably supply the French Air Force with 70 Tucano trainers for \$140m as part of the offset deal.

John Barham



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Quite simply, no other midsize jet offers as much overall comfort for

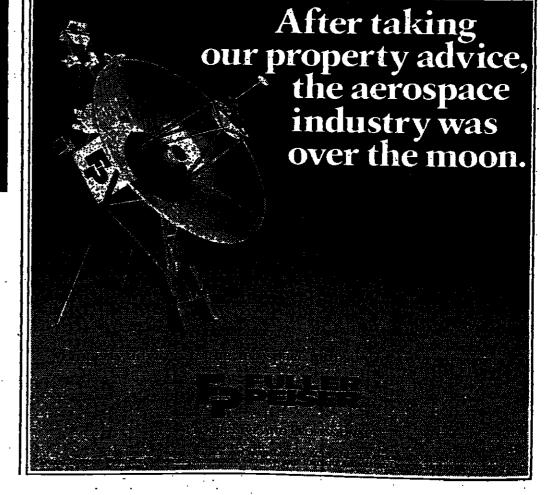
eight or more passengers. Nor does any jet in its class offer more assurance of reliability. Citation III has the strongest warranty in the business. And a global network of service centers and authorized service facilities delivers on Citation's outstanding reputation for customer support

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AS INDIA'S two main national carriers – Air-India for international flights and Indian Airlines mainly for domestic routes - prepare themselves for a major expansion of their fleets with aircraft purchased and leased from the US, France and the Soviet Union, the gov-ernment-owned Hindustan Aeronautics (HAL) is pressing ahead with a major programme to build more Western and Soviet aircraft itself under

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licence. decade include manufacture of Hindustan Aeronautics' the MiG-29 and even the main customer is the Indian MiG-31 once the Soviet Union Air Force, to which it sold air is ready to transfer the knocraft and components worth RS 6.52bn in 1987-88, and thus showed a profit before tax of RS 450m. have been reached by the two governments on the indigenous

The company's principal activities involve the design. manufacture, repair and over-haul various kinds of aircraft and helicopters and related aero engines, avionics equipment, instruments and other

earts.
Its main production efforts are concentrated on the mann-facture of fighters, and in the past few years it has been mov-ing into new generation aircraft, shifting notably from making the now obselete MiG-21-bis with Soviet collaboration to the later MiG series. gas-turbine engine (coded in 1984, its factory at Masik, GTX-35) is ready. The LCA is Maharashtra State, switched to now expected to make its first

INDIA Hindustan still concentrates on fighters

building the "swing-wing" test flight in the mid-1990s.

MiG-27M (named the Bahadur Progress on the AHL is faster. The design work is finished, tooling is continuing and last year the fabrication and last year the fabrication process began. The 4,000 kg belicopter has a pair of French engines but eventually Indiandesigned engines will take

their place. HAL also makes the Domier Do-228 twin-engined light transport aircraft with West German collaboration. So far, 110 aircraft are on order for the three armed forces as well as for Vayudoot, India's fast-ex-panding local-service feeder airline that operates regional

The Dornier is now finding acceptance among passengers despite some initial hesitation because of minor accidents. Other HAL operations include local building of the Anglo-French (Sepecat - British Aerospace-Dassault) Jaguar International jet strike-trainer

aircraft, currently being manu-

factured under licence. Its

engine now comprises about 40 per cent Indian components.

been assigned to the company. designed and test flown at HAL's plant at Kanpur. As part of its modest export efforts, HAL has signed a con-

tract with Malaysia for the

Also going ahead is the programme to introduce the

Advanced Turbo-Prop (ATP)

aircraft, developed by British

Aerospace by improving the

original Avro HS-748.

A Memorandum of Under-

standing and a business agree-ment were signed between

HAL and British Aerospace last year to increase the scope

of work sharing between the two companies on the ATP. As

a result, HAL has received an

initial order for the supply of

12 tailplane sets for the aircraft

to British Aerospace.
Among HAL's recent
achievements have been deliv-

ery of Jaguar trainer aircraft

(Darin version) with a "nav attack system" and Jaguar strike aircraft with Agave radars to the Indian Air Force. Servicing of AN-32 Soviet

transport aircraft aircraft has

export of Chetak helicopter spares worth RS 35m. The Che-tak is developed froms the French-designed Aerospatiale Alouette III helicopter.

HAL has also negotiated con-tracts for the repair and over-haul of three Alcuette III helicopters and supply of two Chetak helicopters worth RS

50m to Ghana.

Developments in civil aviation relate mainly to the expansion plans of Air-India and Indian Airlines, both of which have fleets far short of requirements since demand for seats on all the routes they fly

is growing fast.
Indian Airlines, which has
one of the largest domestic networks among the airline mem-bers of the International Air Transport Association (lata), will soon add the Airbus A 320 150-seat airliner to its existing fleet of 11 Airbus A-300s, 27 Boeing-737s, six HS-748s and two Fokkers. It has ordered 19 A-320s, with delivery starting next year, and due for completion by 1990.

After 1991, delivery of 12

Indian Airlines made an esti-

more A-320s will start and Airbus Industrie has already been given a letter of intent for

Air-India plans to spend RS 15bn to restore its "Maharaja" symbol to its former glory by adding to its existing fleet two new Boeing 747 "combis" (cargo/passenger) aircraft and two more A-310 Airbuses later

this year. Its existing fleet consists of 10 Boeing 747s, three A-300-B4 Airbuses and six A-310-300 Airbuses. In addition, it has leased an Ilyshin IL-76 from Russia for its Delhi-Moscow route.

Both airlines are under heavy political pressure to buy Soviet aircraft, which have been offered to the Indian government cheaply and on soft credit terms as well as payment in rupees. For the present, both prefer to buy aircraft from their tradi-

tional Western sumpliers such as Boeing and Airbus Industrie, but the pressure to buy Soviet products could become

cents.
The airline has had to use

Indian fuel because of the introduction of a number of non-stop flights originating in India.

Since more such flights are planned, the losses are expected to increase, but Air-India is pressing the Government for parity on fuel costs and is optimistic that it will gain relief before the end of the year.

The Government is conscious of the fact that both carriers have a poor image among the travelling public for vari-

ous reasons Both have now had their boards overhauled and their part-time chairmen are distinguished industrialists from the private sector. In addition, the directors now include various representatives of private companies in an effort to improve

the airlines' management.

So far, this has not had much effect. A committee appointed to look into the workings of Air-India and Indian Airlines has recently recommended partial privatisa-tion, that would include the

sale of equity to the public.
This controversial proposal is still being considered and its acceptance could be delayed because of the current uncertain political situation.

K.K.Sharma

#### **INDONESIA**

#### Collaboration is the keynote

spectacular sales record and a considerable debt burden, Nurtanio (IPTN), Indonesia's state serospace industry, continues to attract foreign partners. The company's drawing board is cluttered with ambitious designs, many of which may never get off the ground.

IPTN was set up in 1976 as the vanguard of Indonesia's industrialisation programme, brainchild of Dr. Jusof Habbie, a trained engineer and former director of the German aircraft manufacturers Messcherschmitt-Bloekow-Blohm (MBB).
The company now has estab-

lished relations with Casa of Spain, MBB, Aerospatiale of France, Fokker, Boeing and most recently General Dynamics on a range of collaborative projects from airframe manufacture to offset and simple maintenance agreements. Some ventures have been visibly more successful than

others. Pride of the fleet is the: ter.

of many of the many the

what the is the said of the state that

Construcciones Aeronauticas (Casa) - Spain's state-con-trolled sirframe maker. Although there have been

January. Plans in the next

whow. Agreements in principle

Other major projects of the

company are manufacture of the inturistic "light combat air-craft." (LCA) and the "advanced light helicopter"

(AHL), based on its own designs (although some Western assistance is involved in both ventures, fischuding Messerschmitt-Bolkow-Blohm of

West Germany on the AHL) at

west Germany on the Aril.) at its complex in Bangalore.
Progress is slow despite the fact that General Electric F-404 engines are to be used initially for the LCA until HAL's own gas-turbine engine (coded GTX-35) is ready. The LCA is

production programme.

few foreign sales to date, this 44-seater, easily converted into a military transport aircraft, is seen as a possible competitor to the Italian ATR-42, as a short-hop commuter plane. Casa and IPTN are setting

up a joint marketing arm in the US, though the Indone-

sian-made 235 has still to win an airworthiness certificate from the American FAA. In the short term, IPTN will continue to sell to the domestic market. where local carriers and the military are now obliged to buy the company's products.

IPTN's helicopter programme has been more trou-bled. The company part-manu-factures under licence both the Puma and Super Puma of Aerospatiale, the NB-412 with Bell of the US and the BO-105.

IPTN was recently awarded

But domestic sales for the rotary wing aircraft have been sluggish, particularly since the downturn in Indonesia's oil industry. Aerospatiale is now converting its Puma for naval

use on aircraft carriers. In the military field Indonesia's defence procurement is now increasingly linked to off-set deals with IPTN. General Dynamics of the US has won an order for 12 of its F-16 jet fighters, with about 30 per cent of the \$337m contract cost covered by offset agreements.

British Aerospace and Rolls-Royce are currently dis-cussing possible collaboration on the new Hawk 200, a sub-sonic combat fighter. Dassault, the French aerospace company, has offered jointly to manufacture the Super Eten-dard, the fighter used by the Argentine Air Force in the Falklands War. Offset deals will-result in the

transfer of skills and also prothe MBB twin-engined helicopvide the company with badly-needed revenues. The habit is multi-purpose fixed wing CN IPTN was recently awarded needed revenues. The habit is 235, jointly manufactured with an export licence for the 105. catching on in the civilian air-

IPTN this year signed an

agreement with Boeing to supply about \$800,000 worth of parts for its 767 aircraft, Boeing's answer to the Airbus. Fokker, the Dutch aircraft manufacturer, has also agreed a component supply contract worth between \$15m and \$20m. Garuda, the state airline, today has the biggest fleet of Fokker F-27 and F-28 aircraft in the world. But by granting small offset agreements, both Fokker and Boeing are clearly positioning themselves for the much larger sales contracts as Garuda phases out its domestic DC-9 fleet and enters the mar-

new aircraft. Over the longer term, IPTN has plans to build its own commercial airliner, the 100-seat Atra-90, an unducted prop fan aircraft which was originally scheduled to be in service by

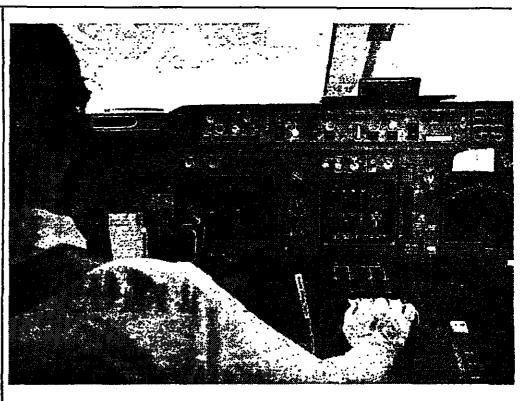
Boeing, MBB and Fokker were involved in developing the concept, but Boeing has

Indonesia's lower oil revenues, there is now some doubt whether the project will ever be realised.

Cash constraints may prove the undoing of many of IPTN's more ambitious schemes, Lowinterest financing together with countertrade arrangements are likely to be required from any foreign aerospace company wishing to do business with IPTN.

Dassault reportedly offered 100 per cent countertrade in its failed bid to persuade the Indonesians to buy its Mirage 2000 instead of the American P-16. On the engine side, Rolls-Royce already has some measure of collaboration expeket for perhaps as many as 200 rience, with its Dart engine supplied to Garuda. Before the arrival of the F-16 an earlier generation of British Hawks successfully provided Indonesia with its main frontline

John Murray Brown



750m in 1987-88. Because of an

increasing number of tourist

to buy their tickets in hard

currency, it has been able to

finance its aircraft purchase

plans without government help

Air-India, on the other hand,

has not performed as well financially and, after a number

of profitable years, is estimated to have made a loss of about RS 400m in 1987-88 despite the

tourist boom that India is

experiencing. In 1987 a record 1.2m foreign tourists visited

The international carrier

attributes the loss to deprecia-tion and interest charges on

loans taken in the past at a time when there was no

increase in its carrying capac-

cost of aviation fuel bought in India. This costs 107 cents a

gallon compared to comparable international rates of 58 to 60

Another reason is the high

or borrowings from abroad.

sengers, who are required

Flight deck of the new Boeing 747-400 series. The new Jumbo has a completely revamped flightdeck layout using cathode ray displays. The simplified arrangement has 600 fewer dials, gauges and switches than present models and the crew has been reduced from three to two

# A STATE OF THE STA

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China's aim is to extend co-operation with other countries

#### Preparing for significant expansion

CHINA HAS now embarked on a major reorganisation of its commercial aviation infrastructure that will also involve a significant expansion of its

a significant expansion of its aerospace industry.

The Seventh Five-year plan covering the period 1986-90 has especially singled out improvements to air transport as a national priority, while also recognising that to develop the aerospace industry is a rapid method of gaining advanced technology and thus facilitat-ing the country's entry into the mainstream of world economic

development. The Ministry of Aviation Industry has outlined the objectives as being to develop new aircraft for trunk routes while also developing new regional airliners, general avia-tion aircraft and helicopters. Using its own existing capabilities as a base, the aim is extend co-operation with other countries and thus progressively modernise the aviation manufacturing and air transport industries.

Forecasts are that the overall volume of air travel in China will rise to between 30m and 35m passengers a year by the year 2000, some three times greater than at present. For a country of more than 1bn people, this indicates that even by then China will still

have a long way to go before it nears the volume of air travel already achieved elsewhere in the Western world. One feature of this growth is

that China is now encouraging tourism, and it has been esti-mated that by 1990 it will be welcoming some 5m tourists annually, a figure that may well rise to 10m a year by the turn of the century, generating US\$8-10bn annually in reve-

China is building hotels — close to 1,000 international-standard hotels are now available throughout the country, with a total capacity of 147,500 rooms, and about 190 more under construction, or another

China is also building airports, with at least five to be built at Ylanyang in Shaanxi Province, Xining in Qinhai Province, Ningbo and Wenzhou in Zhelang Province and Taoxian in Liaoning Province, with others planned for the 1990s.

Such growth is already expected to result in a doubling of the requirement for aircraft, from the present 400, mostly small and ageing types built under licence to Soviet designs, to about 800, including many Western-built aircraft. Already, a major restructur-ing of Chinese civil aviation is in progress. The Civil Aviation

long the sole entity governing air transport, and responsible air transport, and responsible also for airports and air traffic control besides being also the country's flag carrier, is being reorganised into six operators.

CAAC Beijing becomes China International Airways, taking over long-haul services, while CAAC Shanghai becomes China Factory Airlines The

China Eastern Airlines. The CAAC Guangzhou Regional Administration becomes China Southern Airlines, the Xian Administration becomes China Northwest, the Chengdu Administration becomes China Southwest and the Shenyang Administration becomes China

The current aircraft fleet is being divided between the airlines, but purchasing of aircraft will remain in the hands of the State-run China Aviation China of the State-run China Avia-tion Supplies Corporation.

At the same time, although these airlines will have a degree of autonomy, top man-agement is being nominated by the CAAC, while fares-fixing and route selection will still also be in the hands of the State But there will be a few State. But there will be a few "independent" airlines, operat-ing on a small scale (fewer than 200,000 passengers annu-

is evident that China is still trying to establish pre-

cisely which new types of air-liner are best suited to its long-term needs. This explains ong-term needs. This explains why over recent years it has been buying in small numbers a wide variety of foreign-built jet airliners, spending more than \$1.5bn on Boeing 747s, 767s and 757s, Airbus A-310s, McDonnell Douglas MD-82s, British Aerospace 146s, Soviet Tunoley Tu.154s and Short Tupolev Tu-154s and Short

Sos.

Each type is being carefully studied in operational service, and from this experience the Chinese airlines will determine precisely what they need and order when they are ready.

In developing its own internal commercial aviation infrastructure. China will seek not

structure, China will seek not only to meet its immediately emerging needs, but also to enhance its own aerospace skills, initially through the manufacture of Western airlin-ers under licence, and the manufacture of parts for Western aerospace companies, leading to joint development of major new airliner ventures.

Already, for example, parts of the BAe 146 and Short 360 are already being made under sub-contract in China, as are parts for the Boeing 747 and 737, and the Franco-Italian Avions de Transport Regional ATR-42. Both Boeing and McDonnell Douglas are training Chinese aviation engineers in Seattle and Long Beach, Cal-ifornia.

At the same time, China is looking to export to the West some of its own indigenous aircraft, such as the 17-passenger Harbin Y-12 light short take-off

tial, and Western manufacturers who ignore it are likely to find no long-term outlets for their own products in China.

Currently, China wishes to build a major new 150-plus seater "trunk route airliner" in collaboration with Western countries. The three major builders, Airbus, Boeing and McDonnell Douglas, have all submitted proposals, as have the "Big Three" engine builders, General Electric, Pratt & Whitney and Rolls-Royce.

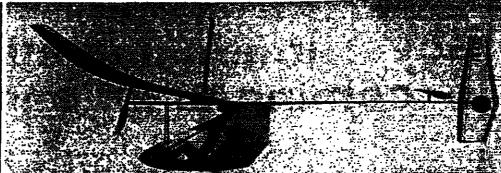
Whitney and Rolls-Royce.
The Airbus proposal is based on the A-320, the Boeing plan on the 737 and 757 which are already in service in China, while McDonnell Douglas is

The McDonnell Douglas MD-82 twin-engined short-to-

medium range jet airliner, for use in China, is already being assembled in a specially built factory in Shanghai by the Shanghai Aviation Industrial Corporation (which built the Y-10, the first Chinese jet air-

and landing transport.
This collaboration is essential, and Western manufactur-

concentrating on its MD-92



but it would be unlikely to enter service much before the mid-1990s, even if a formal go-shead were given next year.

But preliminary indications But preliminary indications are that the project is regarded as serious at the top level in Beijing, with eventually upwards of 150 aircraft needed. At the same time, China is becoming increasingly interested in developing regional aircraft, of 100 seats and below, to meet its massive demands. to meet its massive demands for smaller sircraft to serve its scattered population centres.

One project is for Messer-chmitt-Bolkow-Blohm of West schmitt-Bolkow-Blohm of West Germany and the China National Aero Technology Import and Export Corporation (Catic) to develop, through a joint company, a 75-sest twin engine commercial transport, the MPC-75, which could well be a prop-fan type venture.

# A SECOND TRY

aircraft at the Famborough Air Show will be Daedalus (above), which flew 74 miles en the islands of Crete and Santorini in April, a record for human-powered

ite craft, weighing only 70lbs,was pedalled by the Greek cycling champion Canellos Canellopoulos, who had a watery ending to his Shr 55 minute journey. Wind snapped the tail as he was trying to land on a beach and the Deedakus craft fell into the

The 112ft wing-span aircraft was built by students and mythological figures Dat and his son icarus after their

The latter, despite his father's warnings;flew so close to the sun that the wax on his wings melted plunging

The modern-day project was sponsored by United Technol-

The previous distance record for human-powered Bryan Allen piloted Paul Mac-Cready's Gossamer Albatross

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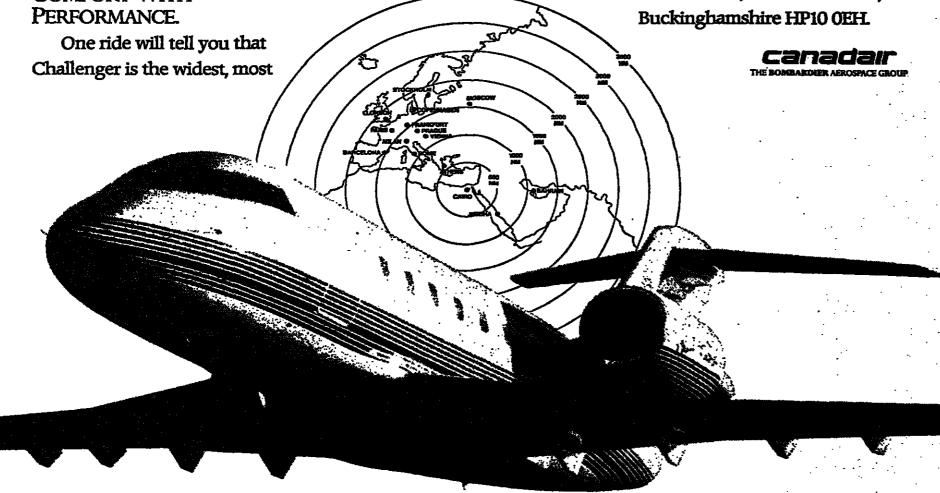
comfort for up to 19 passengers is all achieved with such quiet dignity that Challenger flies unrestricted by curfews at noisesensitive airports.

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**JAPAN** 

# Designated a key industry

JAPAN'S aerospace industry is relatively small, but its leaders have hig ambitions. And it has been designated by Miti, the Ministry of International Trade

become so high that the country's aerospace companies would have difficulty in justify-

ing undertaking any projects on their own.

Japan's space effort is less troubled. It is financed almost entirely by the Government, is aimed at scientific and tele communications developments, and will soon be technologi-cally self-sufficient.

cally self-sufficient.

More than 80 per cent of the Y633.2hm output (1987 figures) of Japan's aircraft industry goes to one customer, the country's Self Defence Force. It is spending Y542.5hm (£2.4hm) this year on aircraft and missiles, most of it with Japanese contractors.

siles, most of it with Japanese contractors.

Most of the work is split among the firee top aerospace contractors, Mitsubishi Heavy Industries (MHI), Kawasaki Heavy Industries (KHI) and Fuji Heavy Industries (FHI).

MHI is by far the largest of the three, and has had the biggest single contract, the supply of F-15 fighters for the Air Defence Force. KHI builds helicopters, T-4 trainers and the P-3C anti-submarine pairol aircraft, while Fuji supplies helicopters and training aircraft. MHI also dominates on the missile side, with Toshiba and Mitsubishi Electric also making certain models.

Mitsubishi Electric also making certain models.

The F-15 programme is coming to an end, and is to be replaced by a new fighter, called the FSX, a joint Y165bn development with the US of the F-16 made by General Dynamics.

Agreement on the FSX projects

Dynamics.
Agreement on the FSX project was reached last September after much controversy. The Japanese side wanted to develop its own next-generation aircraft, partly to prove and improve its own capability, but the US insisted on joint development, not least for trade reasons.

development, not least for trade reasons.

On the civil side, Japanese aircraft makers have been trying for years to catch up with Western competitors, but have been restricted so far to a strategy of cooperation with foreign makers. Thus, MHI, KHI and Fuji all make components for the Boeing 787 jettiner and are planning to be involved in the Boeing 737 project to develop a 150-seat jetliner.

MHI and KHI considered an

150-seat jetliner.

MHI and KHI considered an approach from Airbus Industrie last year to become component makers for the A-330 and A-440 models but after considering it they withdrew, apparently because of their close links with Boeing MHI, KHI and Ishikawajima-Harima Heavy Industries (IHI) participate in the International Aero Engines consortium that makes the V-2500 jet engine.

The industry's main hope for

this point is for a short take off and landing (Stol) aircraft.-strongly needed in Japan where distances between popu-lation centres are relatively.

Ministry of international Trade and Industry, as a key industry of the future.

This would seem to be enough to conclude that the industry is likely to become a formidable world competitor.

However, Japan's aerospace industry has two significant handicaps. First, most of its output is for military use, but Japan's military budget is limited and the country has foresworn arms exports.

Second, since the revaluation of the yen, the costs of development and production of development and production of civil sircraft in Japan have become so high that the country's aerospace companies

where distances between population centres are relatively short but the terrain is mountained and it is difficult to build long runways.

Indeed, the country's only independent development to date has been in this sector, the turboprop YS-11, developed in the early 1960s and selection of the turboprop YS-11, developed in the early 1960s and the furboprop YS-11, developed in the early 1960s and the furboprop YS-11, developed in the early 1960s and selection of the turboprop YS-11, developed in the early 1960s and the furboprop YS-11, developed in the country's a new Stol development project, the Asuka, was begun. It will be completed this year, and the industry is urging the Government to go on to authorise production of a 75
civil sircraft in Japan have become a furbolic to build long runways.

Indeed, the country's only independent development to date has been in this sector, the turboprop YS-11, developed in the turboprop YS-12, developed in the turboprop YS-12, developed in the turboprop YS-13, developed in the turboprop YS-11, developed in the turboprop YS-12, d

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Unfortunately, their propos runs into several practical problems. For one thing, there are already a number of modern Stol aircraft available in the world, including the British Asrospace BAe 146, which would fill Japanese needs satisfactorily. Any move by Japanese factorily. Any move by Japan to develop a competitor at this stage would rouse considerable resentment among other makers, who have been trying hard to sell in Japan.

Japan's space effort will soon be self-sufficient

Second, the potential market in Japan is only about 150 aircraft, less than a quarter of what industry analysts say would be necessary to make the project break even given Japan's high costs of produc-

However, a mishap with a YS-11 underlined its age and industry leaders are now try-ing to attract foreign partners for the project, especially in nearby Asian countries. On the space side, Japan's capabilities came to wider pub

capanines came to wheer public attention last year when two Japanese spacecraft, Sakigake and Suisei, approached and observed Halley's Comet.

Scientific exploration is still a major element in the countries. try's space programme and the Institute of Space and Astron-autical Science (Isas) is eager to carry out more studies of

The other main element is communication and weather satellite and rocket development. The National Space Development Agency (Nasda) already has considerable experience in launching satellites and is on schedule to launch its first totally internally-developed rocket, the H-2, in 1982. The rocket will be able to carry a two-tome payload and

carry a two-tonne payload and so lift Japan into the exclusive club of countries capable of launching their own — and others' — geostationary communications satellities.

Nasda also has just con-cluded an agreement to pro-vide a space-processing module for the US manned space sta-tion project in 1996, and has ideas on the drawing board for space aircraft and space facto-ries

erable funding and the country's space budget is still rela-tively small. At Y121.9bn in 1987, it was less than a tenth of the US effort.

ian Rodger

Australia is to remove detailed restrictions

# **Government limitations** coming to an end

AUSTRALIANS who fly lead peculiar lives. The airline which files them out of the country cannot fly them within it. And the two which fly them within it take off and land their aircraft at near-identical

times across the country.
That is not all. Domestic air fares are high; schedules are highly vulnerable to industrial action; and in-flight service is so institutionalised you are given a meal on the briefest.

Christoph She

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But times are changing. Thanks to a decision announced in October last year, 35 years of detailed government regulation of Australian aviation are coming to an

In particular, the current "two airline" policy is being replaced from 1990. This policy has limited entry to the aviation industry through controls on the importing of aircraft. It in services and faces on major

Giving details of the changes, Senator Gareth Evans, Minister for Transport and Communications, said con-

trols over aircraft imports, has been allowed to resume which had provided the carrying passengers of other threshold underpuning to international airlines on the arrangements currently regulating the industry, would be removed.

Similarly, the two domestic carriers - Ansett, owned by Sir Peter Abeles TNT group, and Mr Rupert Murdoch's

Constraints on new operators will also go

News Corporation, and the state-owned Australian Air-lines — will no longer be sub-ject to detailed controls on pas-senger capacity or air fares. The existing contraints on the entity of new domestic opera-tors will also go. Changes on the international side are less sweeping. Quitas, the state-owned international airline, is to remain Australia's sole designated international

sole designated international carrier. And neither Qantas nor any other international airline will be allowed to carry domestic passengers or freight on regular services. On the other hand, Quntas

SOUTH AFRICA

domestic sectors of its international services. Until this restoration of its "interlining" rights, it had some 18,000

The implications of all these changes for the airlines and the Government have not taken long to sink in. In the case of Australian Airlines, Senstor Evans sald an essential element of the deregulated environment would be a strong, viable, efficient Australian Airlines, able to provide effective competition across the trunk route network."

The strine has since been converted into a state-owned company and the Governme has relaxed its detailed control. giving the sirline more flexibil-ity to operate on commercial

More controversially, the Government would like to see the airline's weak capital base strengthened through full or partial privatisation rather than through an injection from the state's own limited coffers.

bus order will now be reviewed by mid-1992. Australian will undoubtedly be up against a formidable competitor in Ansett. Within weeks of confirmation last year

force taking on the two glants.
Then last October Ansett announced plans to buy 16 Boeing 737-300s, five 737-500s and six 757-200s, with options on an unspecified number of additional aircraft. Some of the

The airline needs some A\$250m in fresh capital over the next three years. Along with other privatisation proposals, however, this has run into strong resistance from Labor party activists.
Australian Airlines never-theless has gone ahead with its plans to compete against the powerful Ansett. In July it

another five options, to be delivered in the period 1990-92. The move followed a deci-sion to defer an order for nine Airbus A-320s. Australian felt it should not incur the higher costs of introducing a com-pletely new type of aircraft when there were so many uncertainties over deregula-tion, the siriline's capital fund-ing and its ownership. The Air-

announced an order for nine

Boeing 737-400 aircraft plus

that the Labor government would terminate the two-airline policy, Ansett bought East-West Airlines, a small car-rier which had tried unsuccessfully to become a low-fare third

aircraft are earmarked for Ansett's New Zealand and international leasing operations, but they are also intended to secure domination of Australia's deregulated

For Qantas, as with Austra-lian Airlines, the future remains clouded with uncer-

Bities.



an Airbus A-320 airliner has entered regular service this summer. Here, the Airbus Industrie test aircraft is followed in formation by aircraft in the liveries of the first three users - Air France, Air Inter and British Airways

tainty because of questions over its ownership and capital needs. Last April a proposal surfaced to merge Qantas and Australian with their stateowned counterpart in New Zea-land, but the plan was dropped after talks between the two

governments

Qantas is now bidding for a stake in Air New Zealand, which the Wellington government wants to privatise. British Airways is also interested, and if it succeeds that might hurt Qantas's competitiveness. other hand, would emphasise the capital problem. Like Aus-

tralian, it needs a fresh equity injection. The airline wants A\$600m, about one-tenth of the amount it expects to spend under its latest five-year plan. Qantas could of course borrow on the capital markets to meet its needs, but it would be unhappy about swelling its debt-equity ratio beyond its current high level of 80 per Meanwhile, the Government

cent: 20 per cent.

Most of the airline's projected spending is to go on new aircraft. It recently added two more Boeing 747-400s to the four-aircraft order announced last year, and one more 767-300 to make five due for delivery. The airline is already operating some 767s.
As for the Australian privati-

sation debate itself, this is in limbo. The Labor Party, at its biennial conference in June, put off a decision by forming a review committee. The Liberal

Party opposition is committed to privatisation, and Qantas and Australian Airlines are at the top of the agenda. But no election is scheduled before

has other aviation issues to grapple with. For example, it is involved in numerous unresolved wrangles with foreign governments over international air rights, the most awk-ward of them with the US. However, this one has now been resolved. Last month,

Australia and the US reached agreement after two and a half years of negotiations, in a deal which gives each country extra access to each other's cities. In other significant moves to reform the aviation industry

the Government in January established a new state-owned **Federal Airports Corporation** to assume responsibility for the country's major civil airports and terminals. One result is the start of long-awaited improvements at the country's most important and least impressive international gate-way - Sydney's Kingsford Smith Airport.

The Government has also set up a new Civil Aviation Authority to provide airways services on a commercial basis. This will levy charges for its services instead of depending on budget revenues from excise and customs duties on aviation turbine fuel and departure taxes.

Chris Sherweil

# Looking for exports

SOUTH AFRICA'S aerospace industry has faced a daunting challenge over the last decade – to update existing aircraft and develop relevant technological niches in the face of the UN arms embargo and the build-up of increasingly sophis-ticated Soviet equipment in Cuben and Angolan hands.

The industry's top priority has been to upgrade the South African Air Force's ageing fleet of Mirage F-1 and even older Mirage 3 fighters to counter Soviet-built MiG-23's, and do the same for its air-to-air mis-At the same time the indus-

try has had to aquire the technological skills to produce key components, like composite blades for halicopter rotus and jet engine turbines and the capacity to re-build and repair damaged aircraft. Since the arms embargo was

imposed in 1977 Armscor, the State-controlled Armaments State-controlled armanes case resembles but industry meshed complex of private consources day apeculation that tractors, has transformed South Africa has virtually fighter. tractors, has transformed South Africa from a heavy

military equipment.

The bulk of exports so far has consisted mainly of battle-tested armoured vehicles and small arms and the long range G-5 and mobile G-6 artillery, all designed for gruelling third world bush and off-road condi-

In future however the zero-space side of the defence industry also sees considerable potential in catering to the needs of financially hard-pressed third world air forces opting for modernisation of existing fleets as an alternative to buying expensive new generation aircraft.

Thanks to the arms embargo and the pressing need to make the maximum use of skills and know-how, Armscor's Atlas Alreraft Corporation, with its sprawling factories close to Johannesburg's Jan Smuts Airmaintenance under the same

the conversion of the delta-winged Mirage 3 fighters, the first of which were delivered in the early 1960s, into modern aircraft capable of matching the MiG-23. The South African Air Force has given the name Cheetah to the improved air-

The industry has opted for developing existing skills and techniques

This has meant major modifications to the engine and air-frame, new avionics and mis-alles. The end result bears a close resemblance to the itraelitaken over the Lavi fighter too expensive. "If the Israelis could not

develop a new fighter with Son worth of US military sid and access to US technology, we would be crazy to try our-selves," one source declared. Instead the South African industry has opted for the "building block approach," developing existing skills, refining existing techniques and taking upgrading to the

Military intelligence sources in the Namiblan operational the respiration operations of the control of the co of a dam at Calueque in Southern Angola by 12 Cuban MiG-23s in June when 11 South African soldiers were killed and no South African aircraft

Apart from greater power

aerospace company in the and speed from the upgraded engine and greatly improved aircraft, helicopters, engines, spare parts and carries out are also equipped with the are also equipped with the recently introduced South African-designed and built VSC Darter missiles.
The V3 missiles are infra-red

homing dog-fight missiles developed by Kentron, Arms-cor's missiles and avionics sub-

sidary. What makes them special is that they are fired by pilots using South African designed and built helmet-sights. Not being able to make or buy new aircraft, the industry has pro-duced a pilot and machine combination which it believes can match the MiGs.

"You don't have to turn like a MiG if you have an all-aspect capability missile like the Darter and a pilot with heimet sights. The pilot can swing his head instead," industry observ-

Unlike much of South Africa's other battle-tried equipment, however, the comparative virtue of the new Cheetah has yet to be proved in actual combat, as thus far there is little evidence of direct confrontation between MiGs and Cheetahs in the Angolan

Apart from the Cheetah pro-gramme, which when completed is expected to be fol-lowed by similar upgrading of the more modern Mirage F-1 fighters, the industry has also substantially upgraded its heli-copters, making its own gear boxes, rotors and other equip-

French-supplied Alouette has been developed into the totally South African-made Atlas Alpha XH-1 helicopter gunship, while the larger Puma is about to be similarly transformed into the Atlas Beta XTP-1. The first experimental Puma has been turned into a test bed for new

**Anthony Robinson** 



Although the new European Fighter Alteralt (EFA) is now going shead, the European multi-role

#### Growth curve.

And through expanding its stake in the

Italian electronic warfare specialist, Elettronica.

With such moves, Plessey is widening its

The growing world strength of Plessey in aerospace is the result of a three-pronged strategy.

Growth through pursuing significant contracts in Europe and the USA, such as those it has won recently in electronic warfare, fuel pumping systems and the Strategic Defence Initiative and is bidding for in the European Fighter Aircraft.

Growth internationally through acquisitions, like that of Leigh Instruments and the Electronic Systems Division of Singer. PLESSEY and the Plessey symbol are trade marks of The Plessey Company ple

technological base and strengthening its presence in North America and Europe. Growth through research and develop-

ment, enabling it to provide integrated avionics packages and work towards the ultimate fusion of aerospace electronics and engineering. Plessey is meeting the needs of military

and civil aircraft worldwide. Its solutions cover identification, navigation, communications, flight data, electronic warfare, armament control, fuel pumping, actuation, electrical generation, power control and aircraft components and assemblies.

Plessey in aerospace is firmly on the growth path to success.



# US keeps share of depressed helicopter market

THE OVERALL world market for helicopters has been depressed for some time. Mili-tary budgets have been reduced and although there are some small bright patches, such as demand for the smaller, lighter and cheaper helicopters for business users in the UK, overall commercial

procurement remains low. This is especially so in the offshore oil and gas industries, where the peak exploration period generated by the oil crises of the 1970s, which created a boom for helicopters, has now given way to logistical now given way to logistical support requiring fewer air-

The post-war pattern of heli-copter deliveries shows that, from virtually none in 1945, deliveries (both civil and mili-tary) rose to a peak of close to 4,000 annually in the late 1960s/ early-70s period, falling back subsequently to only a few

hundred in 1986. In that situation, the US share of the world market has remained high, ranging from a peak of close to 100 per cent at the end of the 1939-45 World War, falling to about 75 per cent at the end-1960s as other manufacturers staked their claims for a share of the markets, and then sliding steadily as the world market fell away, to about 50 per cent today.

The armed forces worldwide remain the biggest individual buyers of helicopters of all kinds, and of those in turn the US armed forces remain the biggest individual purchasers

in the non-communist world. But even in the US, con-straints on military budgets have led to cuts in both procurement orders and develop-ment funds for new ventures.

The lack of civil interest, especially outside the US, stems from such factors as the comparatively high initial purchase costs of rotary-winged aircraft, and their high maintenance costs, coupled with the continued hostility to such air-craft by many residential communities and environmental groups because of their noise.

Apart from companies offering air-taxi services, and some individual business users, the civil helicopter operators are mainly government or other statutory authority users, such as police, coastguard and World Market for Helicopters 1989-1998

	Weight Class Light Inster Medium Hosvy			Total		
<b>US Military</b>	( <del>a</del> )	<u></u>	mediate 180 \$1.3	1,620 \$12.1	270 \$5.7	2,070 \$19,1
Non-US Military World Civil	980 \$0.6 1,460 \$0.9	1,210 \$1.9 1,410 \$2.1	1,610 \$7.5 1,160 \$4.1	2,050 \$16.2 225 \$1.5	115 \$1.6	5,965 \$27.8 4,255 \$8.6
Total	2,440 \$1.5	2,620 \$4.0	2,950 \$12.9	3,895 \$29.8	385 \$7.3	12,290 \$55.5

include the Anglo-Italian EH-101 multi-role aircraft to

replace the Sea King for anti-submarine warfare, among other duties, with a civil ver-sion also planned; the Franco-

West German common anti-

tank helicopter programme; the NH-90 NATO helicopter for

the 1990s; and a light attack helicopter, the Tonal, based on the Italian Agusta A-129.

ventures, reflecting the need to spread the heavy development

costs and maximise markets.

between Westland and Agusta,

with initial planned orders for

more than 150 aircraft for the Royal Navy. Italian Navy, the

RAF and the Canadian Navy. Eventual requirements for the EH-101 are expected to exceed

The anti-tank helicopter pro-gramme is being undertaken

by Eurocopter, a joint company

set up by Aerospatiale of France and Messerschmitt-Bol-

kow-Blohm of West Germany.

The aim is to produce up to about 400 aircraft for the two

countries, with three versions

envisaged - escort and fire support, and separate anti-tank

versions for both the French

four-nation venture between

France, West Germany, Italy and the Netherlands. Two ver-

sions are envisaged - NFH-90, a shipborne (primarily frigates) helicopter for anti-submarine

warfare, surface attack and

search and rescue duties, and

TTH-90 for land-based tactical

transport.
Although the UK originally

participated in the NH-90, it withdrew in April 1987 on the

and West German armies. The NH-90 programme is a

All four are international

The EH-101 is a joint venture

industrial organisations.
Companies in offshore oil and gas exploration and devel-opment are still significant buyers despite their reduced

Nevertheless, activity

remains high among the main helicopter manufacturers: Aerospatiale of France, Agusta of Italy, Messerschmitt-Bol-kow-Blohm (MBB) of West Germany and Westland of the UK, together with the US compa-nies, Boeing Helicopters, Bell Helicopter Textron, McDonnell Douglas Helicopters and Sikor-sky in the US, supported by a few smaller US manufacturers such as Enstrom, Hiller, Robinson and Schweizer.

Forecasts by Sikorsky Aircraft, the world's biggest heli-copter manufacturer, indicate that over the next decade to 1998, Western world helicopter sales will amount to 12,290 aircraft worth \$55.5bn (in 1988 dollars), rather lower than a year ago and reflecting a less opti-mistic projection of US mili-

tary needs.
The US military nevertheless will remain the most significant customer, taking some 2,070 aircraft, representing 17 per cent of the projected market in unit sales, worth \$19.1bm or 36 per cent of the dollar value. Other military sales worldwide will account for some 5,965 machines, worth about \$27.8bn.

The civil market is expected to show little growth, accounting for some 4,255 aircraft worth about \$8.6bn, with both the offshore oil and corporate transport markets remaining

depressed.
The major programmes in search-and-rescue organisa-tions, or other authorities, and all primarily military. They

meet its requirements. Currently, the first flight of the NH-90 is set for late 1991, with

first deliveries in 1995. The Tonal light attack helicopter is a four-nation venture between the UK, Italy, the Netherlands and Spain. The four armies are studying subnoir armies are studying sub-missions from the Joint Euro-pean Helicopter team involved, and a common design may be agreed by this September. In the US, the original Army LHX programme for a single

type of lightweight armed reconnaissance helicopter to replace a variety of types in current service, although now considerably scaled down, remains a massive programme. It involves the eventual pro-curement of well over 2,000 air-

craft, worth some \$37bn.
Two major US industrial teams — Bell Helicopter Textron/McDonnell Douglas and Sikorsky/Boeing — are developing competitive designs in response to a "request for proposals" from the US Army.

Selection of the team for the final contract is expected in late 1990, with a maiden flight in 1993, and first deliveries in March 1996.

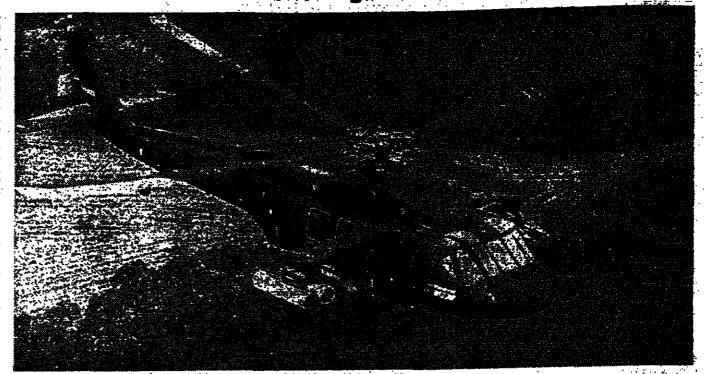
International collaboration is also being encouraged on the engine for the LHX, for which two teams are also competing the Light Helicopter Turbine Engine Company (LHTEC) comprising the Garrett and Allison Division of General Motors, and Textron Lycoming/Pratt & Whitney.

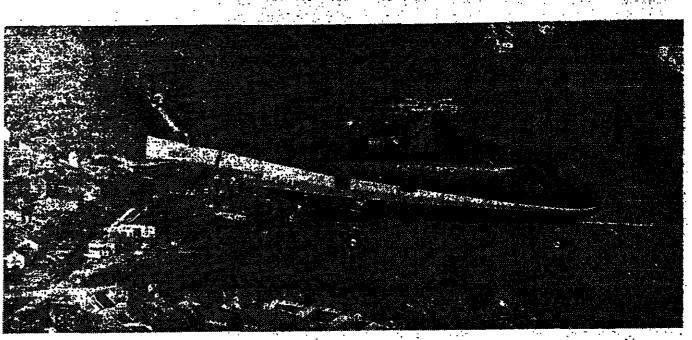
A major new belicopter proramme now under way at McDonnell Douglas Helicopters is the design and development of a revolutionary design called a "Notar" – a "No Tail Rotor Helicopter."

In this design, called the MD-520N, the customary high-speed rotating fan on the tail boom of conventional helicopters is replaced by a stream of air from the aircraft's engine. This makes the aircraft easier to fly, while increasing safety and reducing the pilot's

The prototype is due to fly in mid-1989, with certification for customer use in late 1989. The Notar system will also be incorporated on the company's eight-passenger MDX helicopter, now in the preliminary

**Michael Donne** 





version of the US Sikorsky Black Hawk which the UK company is now offering to UK and other cu ove: The Anglo-Italian (Westland-Agusta) EH-101 multi-role helicopter, now in production, with both military and civil versions stanned. Governments and other statutory authorities are major users of helicopter exploration and development are still significant buyers despite their reduced require nte. The US milit significant single customer in the West even though cuts in military budgets have led to fewer orders

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Airport during the night curiese The 535E4 powered Boeing 757 is already proving its cost of ownership advantages in airline service.

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